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GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

MONTHLY REPORT

DECEMBER, 1936

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GOVERNMENT OF NORTHERN IRELAND
MINISTRY OF AGRICULTURE

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MINISTRY OF AGRICULTURE

MONTHLY REPORT

DECEMBER, 1936.

"'Tis done! dread winter spreads its latest glooms,
And reigns tremendous o'er the conquer'd year."

What has been an extremely wet year is drawing rapidly to its close, and there is little doubt that 1936 will be best remembered by farmers in Northern Ireland for the most unfavourable weather conditions which prevailed at the most crucial periods in the agricultural calendar—seed-time and harvest. In other respects, however, this year gave rather more satisfaction, and the slow but steady revival in trade had a favourable influence on nearly all sections of the agricultural industry.

The measures taken for the improvement of the milk and pig industries continued to have salutary effect, and, profiting from the experience gained from the working of the Pig Scheme, The Pig Industrial Council has decided to amend the machinery used in connection with the fixing of prices for 1937. A special article dealing fully with this matter will, it is hoped, be published in the January issue.

The special features of this issue deal with matters affecting the milk industry. Of chief importance to producers of milk for manufacturing purposes is the special article on Equalisation Payments to creamery suppliers on page 13. A second article on the Butter and Cream Marketing Scheme briefly discusses the reasons for introducing this Scheme, and describes its main provisions; this begins on page 11. Of importance also to those engaged in the milk industry in Northern Ireland, although less directly, is the Review on pages 16-20 of the Milk Re-organisation Commission's Report published at the end of November.

AGRICULTURAL CONDITIONS.

AGRICULTURAL CONDITIONS AT 1st DECEMBER, 1936.

Extremely rough and cold weather conditions generally marked the first two weeks of November, and the almost incessant heavy rains, especially of the second week, caused further flooding, whilst severe storms raged on several days during the period. Later the weather was drier, but the very heavy fogs which enveloped the country, and the sharp frosts of the third week of the month, were further handicaps to outdoor work, which up to this time had been possible only on rare occasions. Climatic conditions improved further, though but slightly, towards the close of the month when temperatures rose slightly and rainstorms were less prevalent.

As indicated, seasonal farm work has been retarded. Little progress was made with ploughing or with the sowing of winter wheat. The digging of potato crops remaining in the drills was slow and difficult work on account of sodden ground conditions.

Pastures deteriorated to a considerable extent as the result of the excessive rains and the sharp frosts, but in some light soil areas they are still providing a fair amount of keep. The carting out of farmyard manure, and the dressing of grass lands with phosphatic manure, were generally hampered, although a good start was made with these operations in some districts.

Home-grown food supplies are fairly plentiful throughout the country, although the quality of fodder, and in some instances of oats, is much below the usual standard. It is also learned that in a few areas supplies of roots are likely to be limited in extent. Purchased food stuffs continued plentiful at stores throughout the country at steady to firmer rates.

Outlying cattle suffered from the severe weather, and the deterioration of pastures, more especially those which were not hand-fed. In this connection it is learned that a large percentage of stores have been receiving hand-feeding for some time now, but that the number of animals being stall fed has not changed much. The comparatively higher prices ruling for forward stores is advanced as an explanation.

The general coldness and dampness of the past season is stated to be now showing its effects on the live stock in general, and cattle in particular. Hoose in calves is fairly prevalent in some districts.

Sheep also have lost slightly in condition as the result of the rough weather and the continued wetness of the ground.

THE CROPS.

WHEAT.—Fairly good progress was made with threshing during last month despite the unfavourable weather, and although the returns vary to some extent, it will be seen from the particulars furnished on page 10 that the average yield of the whole crop is only slightly below that for last year. The quality of both the grain and the straw, generally, is fair to good.

Prices paid by registered merchants to farmers for millable wheat reflected the variability of the quality of the grain, and ranged from 6s. 9d. to 10s. per cwt.

In a few districts the sowing of winter wheat was well advanced, particularly during the latter half of November; but, generally speaking, the area sown is much less than was intended, on account of weather and soil conditions. Judging from the present position it is thought that unless these conditions improve the acreage under this crop this season will not be greater than last year when the season was equally bad throughout.

OATS.—Considerable progress was made with the threshing of oats despite the bad weather, but this work remains slightly in arrear compared with a normal season. The yields vary to a considerable extent, ranging from about 14 cwt. of grain per statute acre on poor land, to about 26 cwt. on good soils.

The average yield for the whole country, together with particulars of extent and total production, are given on page 10. The quality of the grain is generally medium, whilst the straw is of inferior quality in most cases.

Rather smaller quantities of grain were marketed during November than in the previous month, and the average price was a shade easier on the month at 5s. 7½d. per cwt. The range of prices at markets was from 5s. to 6s. 9d. per cwt.

BARLEY.—A fair proportion of this crop was threshed last month, and the yields in most cases have been fairly satisfactory, although the returns vary from 14 to 24 cwt. of grain per statute acre. The quality of the grain is mostly fair to good, but the straw is generally below the usual standard.

Most of the barley grown is kept for consumption on the farm, and no sales were reported.

Fuller particulars of the yield and production of this crop are also given on page 10.

FLAX.—Scutching operations were fairly general throughout the country last month, and the returns generally have been rather below the average. The quality of the flax is also stated to be less satisfactory than usual, more particularly from crops that "lodged" or were otherwise damaged at or before harvesting time.

Increasing supplies were marketed during last month, and the average price for the month showed a general firmer tendency at 9s. per stone. The average price for November, 1935, was 9s. 4½d. per stone.

POTATOES.—Most of the crop has been raised, but in late districts, where digging was not completed, this work was possible only during the latter half of the month when the weather and ground conditions were a little drier. In these districts, therefore, some potato digging yet remains to be done. It is generally feared that on account of the effects of blight, and of souring of the tubers in water-logged heavy soils, a high proportion of the tubers, particularly of the white varieties, will be damaged. The Arran Victory variety is stated to have been affected to a lesser degree than the other principal varieties in these respects.

Larger supplies of potatoes were marketed for local consumption during November than a month ago, and prices, which were steady up till the middle of the month at around 3s. 6d. per cwt., rose during the latter half, and at the close averaged 3s. 9¾d. per cwt. These prices are appreciably higher than those obtained at the corresponding dates last season.

Much heavier shipments were made to Great Britain than a month ago, more especially during the last two weeks of November, when the prices, paid by shippers, were rising.

The following were the shipments during last month compared with a year

page 9.

Week ended.	1936	1935
	Tons	Tons
7th November	4,720	5,658
14th November	4,332	3,639
21st November	7,017	6,008
28th November	7,075	6,480

Whereas average prices at local markets during the week ended 5th December improved further by 2d. to 3s. 11¾d. per cwt. for all classes of the main crop, shippers' prices per ton were generally easier on the week, and ranged as follow:—

	Bagged.	Loose.
Up-to-Date	£4 0 0 to	£3 10 0 to
(Red Soil)	£4 5 0	£4 0 0
Up-to-Date	£3 17 6 to	£3 10 0 to
(Grey Soil)	£4 5 0	£3 15 0
Arran Consul	£4 0 0 to	£3 10 0 to
	£4 5 0	£3 15 0
Arran Victory	£3 10 0 to	£3 5 0 to
	£4 0 0	£4 0 0
Arran Banner	£3 12 6 to	£3 5 0 to
	£4 0 0	£3 15 0
Kerr's Pink	£3 10 0 to	£3 10 0 to
	£4 5 0	£4 0 0

MANGELS.—Most of the crop has been lifted and stored in good condition. The quality of the roots is generally good and they are keeping well. The average yield is stated to be of normal dimensions, although the returns vary to a wide extent.

TURNIPS.—This crop is very uneven as the result of the extremely wet season, but on the whole the returns will not be much below the average. Although the weather for the greater part of the season was unfavourable for this crop, it has made substantial improvement during the latter end, and fairly good supplies are available on most farms. As a general rule disease has caused smaller losses than last year.

HAY.—The returns of the season's crop are given on page 9. The threshing of seed hay continued during November, and although the yields are generally fair as regards quantity the quality of the seed in many instances is surprisingly good for the season.

Larger supplies were marketed last month than in October, and average prices were firmer on the month at 67/11 per ton for first and second year's (Upland) hay, and 45/5 per ton for meadow hay.

GRASS SEED.—Perennial and Mixed seeds were marketed in much smaller quantities than in October, whilst Italian grass seed was in considerably larger supply. Average prices declined on the month, Perennial cheapening by 1/2¼ to 15/2½ per cwt., Italian by 8¾d. to 9/8½ per cwt., and Mixed seed by 1/5¼ to 9/5½ per cwt. A slightly increased supply of Crested Dogstail, marketed at Ballynahinch, was 11d. cheaper on the month at 67/1 per cwt.

LIVE STOCK.

CATTLE.—Outlying cattle were affected by the continued cold and rain, and those dependent entirely on grass for sustenance lost condition. Since, however, hand-feeding was more or less general, stores as a rule maintained a fairly good thrive throughout the month. Stall feeding is stated to be on much the same scale as usual. The bill of health is also satisfactory, if the fact that hoose is fairly prevalent among calves be excepted.

The health and condition of dairy cattle have been fairly good throughout November, but the effects of the inclement weather made it necessary to provide increased rations to maintain the milk yield at a seasonal level. It was reported from a few districts that some dairy cattle were in backward condition, and that calving has been less satisfactory than usual.

Fairly large offerings of stores at fairs experienced a steady trade, and prices for good-quality forward cattle improved towards the end of November in sympathy with the trend of beef prices.

Average supplies of dairy stock were offered at fairs, but the quality in general was barely moderate. Trade generally was fair to steady at about late rates, but choice young breeding cattle were scarce and in keen request at former prices, as were also good quality stock suitable for the dairy trade.

Sheep.—The flocks are in fair condition, and the general health fairly satisfactory. There are some cases of fluke, however, and foot rot is rather more prevalent than usual in many districts, which is due to the extremely wet season.

It is considered that there has been a general tendency for owners to increase their breeding stock this season.

Small supplies of sheep and lambs at fairs held last month met a fairly steady trade, and prices were little altered. The best enquiry was for breeding ewes and good-quality fat lambs.

Wool has been in keener request at markets, and prices have advanced. Long unwashed wool was selling at from 7d. to 8d. per lb., and mountain unwashed wool at around the former figure.

Pigs.—Larger offerings of young pigs were shown at fairs, and a steady demand ruled, and prices, although fluctuating between narrow limits, were generally little changed on the month.

Sows for breeding, also, were offered in increased numbers, and trade for the best was good. Prices generally ranged from £6 to £10 according to quality.

Horses.—There was a very keen demand for horses last month. Cross-Channel buyers were making extensive enquiries, and prices recorded a general advance. Foals were selling at from £15 to £25, and in some cases very good animals were making up to £35 each. Six-quarter-old colts ranged in price from £25 to £35 each. The best light horses fetched from £40 to £80, and some good young horses of the heavier type changed hands at prices varying between £35 and £60. Useful farm horses were obtainable at from £25 to £40 each.

Milk.—The seasonal decline in the milk yield was very marked in a few districts, but elsewhere supplies were maintained at the normal for the time of the year. Creameries paid from $3\frac{3}{4}$d. to 5d. per gallon for milk delivered, the separated milk being returned to the farmer.

The average price paid for milk produced in Northern Ireland and delivered to creameries for manufacturing purposes was 4.36d. per gallon for the

month of October, 1936, and equalisation payments have been paid at the rate of 1.64d. per gallon in order to bring the average price in respect of this month to 6d. per gallon as provided by the Milk and Milk Products Act (Northern Ireland), 1934.

It should be noted that under the Regulations creameries are required to distribute the equalisation payments in accordance with the butter-fat contents of the milk received from each supplier. Farmers should, therefore, bear in mind that the actual payments made to them being calculated on a butter-fat basis may be at a rate per gallon which may vary below or above the average figure herein notified.

THE COST OF LIVING INDEX FIGURE.

The cost of living index figure at 1st November, 1936, was 51, or three points above that for the previous month. At 1st November, 1935, the figure was 47.

THE MARKETS DURING NOVEMBER.

Cabbage, leeks and parsley were marketed in smaller quantities last month, but otherwise supplies of the principal vegetables were larger than in October. Price movements generally were irregular. Cabbage were 4d. cheaper at 1/3¼d. per dozen, and cauliflower 3¼d. dearer at 2/4d. per dozen; savoys were selling at late rates at 1/6¼d. per dozen. At Belfast and Portadown markets only leeks were firm in price and averaged 3¾d. per bunch, parsley was ¼d. dearer at 3½d. per bunch, carrots 7d. dearer at 4/2½d. per cwt., parsnips 2¼d. cheaper at 4/- per cwt., and garden turnips 2¾d. cheaper at 2/0½d. per cwt.

Farmers' butter was marketed in smaller quantities than a month ago, and prices were unaltered at 1/2¼d. per lb. for print butter, and 11¼d. per lb. for lump butter.

Supplies of hen eggs were smaller than in October, but duck eggs were marketed in increased quantities. Hen eggs were ½d. cheaper on the month at 1/1¾d. per lb., whilst duck eggs improved in price by 1/0½d. to 14/9½d. per 120.

CHRISTMAS POULTRY TRADE PROSPECTS.

There is little further to add to the statements issued by the Ministry in regard to the prospects for this season. The cross-channel markets remained quiet up to the second week of December, and much uncertainty prevails as

to the direction which the trend of prices will eventually take. Imports of turkeys entering the United Kingdom during the week ended 25th November last amounted to 6,674 cwts., as compared with 1,222 cwts. the previous week, and 10,469 cwts. during the corresponding week of 1935. The bulk of recent imports was made up of continental supplies. Roumania sent 2,316 cwts., Hungary 1,337 cwts., Yugo-Slavia 942 cwts., Poland 241 cwts., whilst other foreign supplies included 360 cwts. from the Argentine. Supplies from Empire sources comprised 1,061 cwts. from Australia, and 392 cwts. from the Irish Free State. Ducks and Geese also were imported in larger quantities during the same week, and most of the supplies were of Irish Free State origin. Other poultry imports totalled 884 cwts. compared with only 93 cwts. for the previous week, and the whole of these supplies came from the Continent, Hungary sending the bulk of the birds.

Prices continued to rule at higher levels than at the corresponding date in 1935, and the London price for English turkeys on the 9th instant was 1/6d. per lb., and for Irish turkeys 1/5d. per lb. On the same date Irish birds were quoted at from 1/5d. to 1/6d. per lb. at Liverpool, and Mid-European turkeys from 1/- to 1/1d. per lb. The following were the prices quoted at the London Central Markets, Smithfield, on Tuesday, the 8th instant:—

Surrey chicken—white—large	per lb.	...	1/3 to 1/5
,, ,, ,, medium	,,	...	1/3 to 1/4
,, ,, coloured ,,	,,	...	1/– to 1/1
,, ,, coarse ,,	,,	...	9d. to 10d.
Country chicken—white—large	,,	...	1/2 to 1/3
,, ,, small	,,	...	1/1 to 1/3
,, coloured, large	,,	...	1/– to 1/1
,, ,, medium			
,, ,, small			
Country chicken—coloured, coarse	,,	...	7d. to 8d.
Northern Irish, prime	,,	...	10½d. to 1/0½
,, fatted	,,	...	1/1 to 1/2
Irish Free State, coloured, lean	,,	...	9d. to 10½d.
,, white, fatted	,,	...	11d. to 1/–
Dutch, white, fresh	,,	...	1/2 to 1/3
Hungarian, best	,,	...	10½d.
,, seconds	,,	...	9½d.
Polish	,,	...	9½d. to 11d.
Soviet Union	,,	...	10d. to 11d.
Hens, English old	,,	...	7d. to 8½d.
Irish	,,	...	6d. to 7½d.
Ducks, country	,,	...	10d. to 11d.
,, Aylesbury	,,	...	1/– to 1/1
Turkeys, Argentine	,,	...	1/1 to 1/2
,, Uruguayan	,,	...	1/– to 1/1
,, Central European	,,	...	1/– to 1/2

Trade on this day was reported as very quiet.

At markets in Northern Ireland, held during November, larger numbers of hens, chickens and ducks were selling at firmer rates than for October. Hens and chickens were 1d. dearer at 1/7½d. and 2/0½d. each respectively, whilst ducks were stationary at the latter figure. Only relatively small supplies of turkeys and geese have so far been purchased at local markets, and prices have ranged from 1/- to 1/4d. per lb. for turkeys, and from 4d. to 5d. per lb. for geese.

RETURNS OF THE EXTENT AND PRODUCE OF CERTAIN CROPS IN NORTHERN IRELAND IN 1936.

HAY.

The total yield of the Hay Crop in Northern Ireland in 1936 is estimated at 730,762 tons as follows:—First Year's Hay 191,636 tons, Second and Third Year's Hay 124,212 tons, and Permanent Meadow 414,914 tons. The estimated average yield of the entire crop is 1.8 tons per statute acre, as compared with 1.9 tons in 1935, and is similar to that of 1934. The average yield for the five years 1931-1935 amounted to 1.8 tons per statute acre.

The following table shows the extent in statute acres, the estimated total produce, and the average estimated yield per statute acre in each of the years 1936 and 1935.

	1st Year's			2nd & 3rd Year's		
	Total Acreage	Average Yield	Total Produce	Total Acreage	Average Yield	Total Produce
	Acres	Tons	Tons	Acres	Tons	Tons
1936	124,520	1.5	191,636	80,925	1.5	124,212
1935	123,221	1.6	200,882	83,907	1.6	134,843

	Permanent Meadow.			Total Hay.		
	Total Acreage	Average Yield	Total Produce	Total Acreage	Average Yield	Total Produce
	Acres	Tons	Tons	Acres	Tons	Tons
1936	210,236	2.0	414,914	415,681	1.8	730,762
1935	217,008	2.1	449,198	424,136	1.9	784,923

POTATOES.

The estimated average yield of the potato crop in Northern Ireland in 1936 is 6.0 tons per statute acre, as against 6.9 tons per statute acre in 1935, and 6.9 tons per statute acre in the ten years 1926-1935.

The following table shows the estimated extent, total produce and average yield per statute acre of the crop in Northern Ireland in 1936, with comparative figures for the year 1935, and the decennial period 1926-1935.

The estimated produce and yield per acre shown in the table represents, in all cases, the yield of SOUND tubers only.

	POTATOES.		
	Total Acreage.	Total Produce.	Average yield per statute acre.
	Acres	Tons	Tons
1936 ..	131,740	784,634	6.0
1935 ..	129,015	886,679	6.9
Average for the period 1926-1935	143,116	984,247	6.9

GRAIN CROPS.

The appended statement shows, in tabulated form, the estimated extent, total production, and average yield of the three principal grain crops in the year 1936, with comparative figures for the year 1935, and the average for the ten-year period 1926 to 1935. The acreage under wheat shows a decrease of 2,196 acres, or 24.2 per cent.; oats, a decrease of 7,646 acres, or 2.8 per cent.; and barley a decrease of 283 acres of 9.1 per cent. The average yields of wheat and barley are lower than in 1935, wheat showing a decrease of 0.1 cwt. and barley 0.7 cwt. per statute acre, while oats shows an increase 0.4 cwt. per statute acre. It will be observed that the average estimated yield for each crop shows an increase as compared with the average for the decennial period.

	WHEAT			OATS			BARLEY		
	Extent	Estimated total production	Average Yield per statute acre	Extent	Estimated total production	Average yield per statute acre	Extent	Estimated total production	Average yield per statute acre
	Acres	cwt.	cwt.	Acres	cwt.	cwt.	Acres	cwt.	cwt.
1936 ..	6,871	146,186	21.3	265,042	5,174,871	19.5	2,823	55,678	19.7
1935 ..	9,067	193,932	21.4	272,688	5,203,301	19.1	3,106	63,518	20.4
Average for period 1926 to 1935	5,527	113,380	20.3	296,974	5,442,141	18.4	1,884	37,098	19.6

THE BUTTER AND CREAM MARKETING SCHEME (II).

It will be recalled that in a previous article on the development of the creamery industry in Northern Ireland it was suggested that, at the beginning of 1936, though great strides had been made in the efficiency of co-operative production, very little progress had been made in the direction of co-operative selling.

Very briefly it may be said that the Butter and Cream Marketing Scheme was introduced for two reasons:—

(1) Because competition among the creameries, all acting as separate selling agents, frequently prevented Northern Ireland butter from commanding as high a price in Belfast as the imported product.

(2) Because agreements which had from time to time to be made between representatives of creameries in Northern Ireland and the Milk Marketing Boards in England and Scotland, as to the price at which Northern Ireland cream should be sold in Great Britain were invalidated by the inability of a few creameries either to co-operate or to adhere to their undertakings.

The attempts of the Ulster Agricultural Organisation Society to induce creameries to regulate the price of their products through voluntary agreements, though they resulted in an expansion of the cream export trade, were only partially successful and, accordingly, it was decided in 1936 to exercise powers under the Agricultural Marketing Act (N.I.), 1933, to bring in a Scheme to provide for the compulsory regulation of the sales of butter and cream.

Notice was given on March 2nd, 1936, of the framing of such a Scheme, and when the period in which objections might be offered had expired the Scheme was approved and came into force on May 5th.

The Scheme provides for the setting up of a Board consisting of the following members, four of whom represent producers, and three of whom are nominated by the Minister of Agriculture:—

H. A. M. Barbour, Esq., Windy Brow, Lisburn (Chairman).

A. M. Buller, Esq., Cloughmills.

J. F. Gamble, Esq., M.P., Bridgehill, Castlederg.

D. A. E. Harkness, Esq., Ministry of Agriculture, Stormont.

W. J. M'Allister, Esq., Artigarvan, Strabane.

R. G. M'Cullagh, Esq., Springfield, Enniskillen.

H. O'Hara O'Neill, Esq., Ministry of Agriculture, Stormont.

All producers selling butter or cream are required to be registered with the Board, except such as sell cream only to creameries registered under the Marketing of Dairy Produce Act, 1929; but the latter may, if they so wish, be registered under the Scheme. Registered producers are entitled to vote at elections of members of the Board, their votes being proportionate to the number of gallons of milk delivered to their respective creameries during a certain period. They are required to pay to a "fund" contributions not exceeding 1/- per cwt. of butter, and 1d. per gallon of cream sold on the fresh cream market.

The principal functions of the Board are to fix the price at, below or above, which butter and cream may be sold by creameries; it may require that either or both products may be sold only through its agents. In exercise of these powers the Board has fixed prices for butter and cream sold in Northern Ireland, and no cream may now be sold to Great Britain except through the agency of the Board, or under a contract approved by the Board.

On 25th May the Butter and Cream Marketing Scheme (Northern Ireland) (Amendment No. 1) Order was made, introducing a slight amendment into Paragraph 37 of the scheme relating to the payment of contributions by registered producers. In August the scheme was developed in the Butter and Cream (Grading and Marketing) (Northern Ireland) Order, 1936, which was brought into operation under Section 4 (2) of the Agricultural Marketing Act (Northern Ireland), 1933. Prior to 1936 standards of quality, packing and marking of butter produced in Northern Ireland applied only to the exported product, but in recent years the export trade has declined to a negligible figure. If the price of Northern Ireland butter was to be effectively maintained, and sales increased, it was evident that the product offered for sale in the home market must be of the highest standard in all respects, and that it must receive adequate publicity. The Order provides:—

> That every producer of butter registered under the Scheme must submit to the Ministry samples of butter from every churning for the purpose of grading. If the butter receives more than certain minimum marks in respect of flavour and aroma, body and texture, packing and finish, it is graded "Premium", and if less than this minimum it is graded "Below Premium".

The Order also makes certain provisions with regard to the marking of butter wrappers, cartons and packages; all packages of butter of "Premium" grade must now bear the words:—

> Ulster Creamery Butter,
> Premium Grade,
> Butter and Cream Marketing Scheme
> (Northern Ireland), 1936,

together with the hand of Ulster in red surmounting, or surrounded by the words "Premium Grade".

In conclusion, it is interesting to note that among the recommendations of the Report of the Reorganization Commission for Milk, a review of which appears on another page, is one to the effect that methods should be considered of increasing efficiency in the manufacture and marketing of milk products. The Commission suggest that the extension of grading on the present voluntary basis (i.e., as it exists in England and Wales), or better still on a compulsory basis under a milk products' marketing scheme, should be of great help to the home industry.

EQUALISATION PAYMENTS TO CREAMERY SUPPLIERS.

Although equalisation payments under the Milk and Milk Products Act (Northern Ireland), 1934, have now been made for the past two and a half years, it would appear that the conditions governing these payments are not fully understood by creamery suppliers throughout the country. It may be well, therefore, to set out the exact position in some detail in order to remove the misunderstandings which at present exist, and to show that creamery suppliers in one area are not being treated differently from suppliers in another area.

In Northern Ireland about 70 per cent. of the milk produced is manufactured into cream or butter at creameries, and immediately prior to the passing of the Milk and Milk Products Act (Northern Ireland) in June, 1934, the creameries were in a very serious financial position. Market values of butter had depreciated to such an extent that many creameries could not afford to pay their suppliers more than 3d. a gallon for milk, the separated milk being of course returned. Had these conditions continued much longer there is no doubt but that many of the creameries would have been forced to close down, and a great deal of the milk which normally went to the creameries would have been diverted to the towns to the detriment of producers who catered solely for the liquid milk trade.

It was at this critical stage in the milk industry that the Milk and Milk Products Act was passed and provided for the establishment of a fund out of which assistance could be given to the creamery industry. The British Treasury also made available substantial contributions to this fund and up to date £350,000 has been received from that source. The conditions attaching to payments from the fund are definitely set out in the Milk and Milk Products Act of 1934, and as they govern the distribution of the equalisation payments among all creameries, it is desirable that the terms of Section II (3) and (4) of the Act should be here repeated :—

(3) "There shall be paid out of the Milk Fund—(a) a payment (in this Act referred to as "the equalisation payment") to be made in respect of all milk produced in Northern Ireland, and delivered to a creamery and used for the purpose of the extraction of cream for sale as such, or for manufacture into butter, and being of such amount as may be required to raise the average price paid by all creameries for such milk to the amount per gallon specified in sub-section (4) of this section;

(4) The equalisation payment shall be paid at such times and in such manner and subject to such conditions as may be prescribed, and shall be (a) for the period beginning on the first day of April, 1934, and ending on the thirty-first day of March, 1936, such sum as will raise the average price of milk hereinbefore mentioned to five pence per gallon during the summer months, and sixpence per gallon during the winter months."

It will be observed that the Act specifically states that the amount of the equalisation payment shall be based on the average price paid by ALL creameries. It does not state that the equalisation payment shall be based on the average price paid by EACH creamery. On account of such factors as geographical position, degree of efficiency, character of trade, etc., prices paid by creameries in any month have always shown a certain degree of variation. These differences in the prices paid have not interfered with the working of creameries in the past and it was not the intention of the Act that these individual prices should be rounded up to 5d. per gallon in summer, and 6d. per gallon in winter. To have done so would only have put a premium on inefficiency, as the creamery paying the lowest price for milk would have received the largest amount of equalisation payment per gallon. In order that all creamery suppliers should share equally in the distribution of the special assistance grant, it is essential that the rate of equalisation payment should be based on the average price paid in respect of all the milk of Northern Ireland production manufactured in creameries, and it is inevitable, therefore, that the total price payable by some creameries will exceed the standard figures of 5d. per gallon in summer, and 6d. per gallon in winter, and in other cases fall below it. The relative position of the suppliers in different creameries, however, is unaltered.

It should also be noted that the Act stipulates that the equalisation payment is to be based on the average price of milk delivered to a creamery, i.e., the actual price at the creamery. The different prices paid by creameries must therefore be adjusted, where necessary, to represent the "price at creamery" before the general average price is struck each month. It would obviously be out of the question to work on the basis of the price "at farm" instead of "at creamery", as the result would be that the entire cost of carriage of all milk to creameries in Northern Ireland, including payments to individual suppliers in respect of the estimated cost to them of conveying their own milk, would be borne from Government funds. If the State assumed liability for milk

cartage, wasteful and unnecessary competition between creameries for supplies would be encouraged, and the position of the weaker creameries would be jeopardised.

Under regulations made by the Ministry, creameries are required to distribute the equalisation payments in accordance with the butter-fat contents of the milk received from each supplier. In actual practice the creamery milk price is calculated from the price which the creamery can afford to pay per lb. of butter-fat, and it is, therefore, only fair that a supplier who delivered, say, 100 gallons of milk, with an average butter-fat test of 3.5%, should receive a proportionately greater amount by way of equalisation payment than another supplier who delivered the same quantity with an average test of only 3.2%. The making of equalisation payments to suppliers on a per gallon basis would be at variance with the long-established practice of creameries, and would penalise suppliers who endeavoured, by breeding and feeding, to increase the butter-fat yield of their cows. It might, furthermore, tempt producers to interfere with the quality of their milk supplies, either by abstracting portion of the butter-fat for home needs or by reducing the butter-fat content by the addition of water or separated milk. In the interests of the industry itself, and the suppliers in general, distribution of the equalisation payments on a butter-fat basis is absolutely essential.

It is hoped that this explanation of the principles governing the monthly determination of the amounts of equalisation payments, and their subsequent distribution amongst creameries and their suppliers, has made it clear that the procedure adopted by the Ministry in the matter has been fair to all suppliers and in strict accordance with the statutory conditions attached to the administration of the Milk Fund and the milk assistance grant made by the British Treasury, and that any modification of the existing position would involve amending legislation.

REPORT OF THE REORGANIZATION COMMISSION FOR MILK, 1936.

The Reorganization Commission for Milk were appointed on 11th February, 1935, in accordance with the provisions of the Agricultural Marketing Acts, 1931 and 1933. Their task was to consider the working of the various marketing schemes in operation in Great Britain, what improvements might be made in their organization and how far they could be assisted by co-ordination between the Boards' responsible for their administration. They had also to consider the extent to which the working of milk marketing organizations in Great Britain could be facilitated by co-operation between the Boards in Scotland, England and Wales, on the one hand, and the authorities responsible for running the Milk Marketing Scheme in Northern Ireland. In this connection the Commission paid a visit to Ulster, and a liaison officer was appointed by the Government of Northern Ireland to assist them in their task. The Commission were not directed, however, to make recommendations for the improvement of the Scheme in Northern Ireland.

The Report of the Commission has now been published; it falls into four parts:

Part 1 gives an account of the Schemes in existence in Great Britain,

Part 2, an appraisal of their effects,

Part 3, a discussion of certain fundamental principles involved in milk marketing,

Part 4, recommendations for the future organization of milk marketing in Great Britain.

The Effect of the Schemes.

The Commission concludes that the Schemes have benefited producers, and the agricultural industry as a whole; returns to the producer have been undoubtedly higher, and producers have profited in addition from the stability of prices, and the increase in the quantity of milk, which they have been able to sell off the farm; the increased quantity of milk sold for manufacture indicates too that manufacturers have not been adversely affected. The cost of all these benefits to the industry has been borne by consumers, who may also be expected to gain in the long run from stable conditions in the milk market.

An interesting chapter in the report is devoted to the effect of the schemes on the volume of milk sales: its conclusion is that the increase in sales which has taken place has resulted from a change-over from farm manufacture

of milk to manufacture of milk in factories and not, as has been widely maintained, to increased production in the manufacturing areas. The quantity of milk produced depends on the number of milch cows and the yield per cow: the figures indicate that production has increased in the years of the Scheme no more rapidly than it did in the years immediately prior to the Scheme. This is an interesting conclusion, because it is similarly believed that the increase of 33% in the quantity of milk sent for manufacture to creameries in Northern Ireland between 1934 and 1935 has been due not to an increase in production but to the diversion of milk from manufacture on the farm to manufacture in creameries.

Criticisms and Recommendations.

The third and fourth parts of the Report may be considered together, since a critical examination of the principles of milk marketing organization naturally involves recommendations for its improvement.

The Permanent Milk Commission.

For a number of reasons the Commission are of the opinion that the power to fix prices should be taken out of the hands of the Milk Marketing Boards and vested in an independent and permanent milk commission consisting of a Chairman and four members nominated by the Ministers responsible for agriculture in Great Britain. This implies no censure on the work of the Milk Marketing Boards, but the Commission feel that any board elected by producers, and therefore concerned first and foremost to advance the interests of producers, is not a suitable body to control the price of a commodity which is of great nutritional value, and from the sale of which other important sections of the community obtain their livelihood.

The Fixing of Prices.

It is proposed that prices will be fixed by the Commission for producers as well as buyers. Under the existing pooling system in England and Wales prices are fixed for buyers only, and the return to producers in each region varies from month to month according to the proportions of milk sold in that region for manufacture and liquid consumption respectively. The Commission recommend that to secure greater stability, producers' prices should be fixed for a year in advance. The level of prices to the producer should be determined not by the proportions of manufacturing milk and liquid milk which it is anticipated will make up the total supply, but by the quantity of milk which the price-fixing body considers should be produced in each region and in each season, e.g., if this body thinks that relatively more milk should be produced in the South coast of England then they will fix a relatively higher price for milk produced in that region, and similarly they can regulate by price-fixing the quantity of milk produced in winter and summer. Prices will

thus be determined not as at present by negotiation between interests or by an estimate of how high a price producers can get, but by the quantity of milk which should be forthcoming in the interests of an efficient industry and of the community.

Under the present system in England and Wales, wholesale or buyers' prices are fixed sufficiently high to compensate producers for the loss on low-priced manufacturing milk. The Report recommends that the loss on the "surplus" of milk sold for manufacture should be borne by the Exchequer. The wholesale price of milk should be high enough to cover only the cost of liquid milk and of the "reserve" which is necessary to secure a steady supply of milk for human consumption throughout the year.

The Government has already advanced in 1934-35 £1¼ million under the Milk Act to support the price of milk sold for manufacture. The Commission envisages that an additional sum of £3¾ million would be needed to carry out its recommendations.

The Encouragement of Liquid Consumption.

The justification for so reducing the wholesale price of milk at government expense is the importance of milk in the nation's diet and the importance of price in determining the quantity of milk consumed. Lower wholesale prices will mean lower retail prices and lower retail prices should result in increased liquid consumption. Such an increase will reduce the quantity of milk sold for manufacture and correspondingly lower the amount of subsidy required to bear the loss on surplus milk. Government funds might also be used, it is suggested, to provide milk at specially low prices to selected classes of the community which are in greatest need of milk. In connection with these recommendations Sir John Orr's addendum to the report drawing attention to the public health aspects is of great interest.

The Commission does not propose that the retail price of milk or that distributors' margins should be fixed: in certain districts however where the retail price appears to be excessively high it is recommended that maximum distributive margins should be determined. A detailed investigation into the organization of the distributive trade is suggested and it is proposed that as soon as possible all urban markets should be supplied by wholesale depots.

Effect of Recommendations on the Boards.

The transference of price fixing powers to a Permanent Milk Commission will not dispense with the need for marketing boards. These will still have important executive and administrative functions; they will be required to enforce the prices fixed by the Commission and assist the Commission with statistics and advice in planning production and fixing prices.

It is proposed, however, that instead of a number of Boards in Scotland there should be a single board responsible for regulating milk marketing in that area.

To co-ordinate the work of the Boards in Great Britain and the authorities responsible for milk marketing in Northern Ireland, the establishment of a standing co-ordination committee is recommended consisting of four representatives of the English board, three of the Scottish board and two of the Northern Ireland authorities. This Committee should collaborate closely with the Permanent Commission.

THE REPORT AND NORTHERN IRELAND.

The recommendations of this report do not apply to the Northern Ireland scheme, as the Commission was not directed to bring the Scheme here under review.

Northern Ireland will, however, have two representatives on the standing committee for co-ordinating the work of the Boards as it is important for all interests that the trade in milk products between this country and Great Britain should be regulated. In nominating members for the Permanent Commission the Minister of Agriculture and Fisheries and the Secretary of State for Scotland will take into consultation the Secretary of State for Home Affairs who is responsible for Northern Ireland agricultural interests in the Imperial Parliament.

An account of the Northern Ireland milk marketing scheme appears in an Appendix to the report. It may interest farmers to know that in the Northern Ireland Milk Marketing Scheme the Ministry of Agriculture was able to introduce many of the measures which the Commission have now recommended to improve the schemes in Great Britain.

(i) While the Joint Milk Council—a representative body—is not strictly speaking comparable with the Permanent Milk Commission envisaged in the Report—the latter being an independent and wholly nominated body, nevertheless all interests are represented on the Council which must like an independent Commission take into account the effect of its price determinations not only upon producers but also upon distributors and upon the community as a whole.

(ii) The Report alludes to the system of grading and payment for quality which prevails under the Northern Ireland Milk Scheme and recommends that grading regulations and that the payment to producers of bonuses for quality should be introduced in the schemes in Great Britain.

(iii) The price fixing arrangements recommended in the Report are similar to those in operation here. The report recommends that the manufacturing and liquid milk markets should continue to be kept separate but that the liquid milk price should be high enough to compensate producers

for the loss on only *part* of the milk sold for manufacture i.e. the liquid milk "reserve." As is well known, in Northern Ireland the liquid milk producer's liability for the loss on manufacturing milk is limited. He pays a levy which may not exceed a certain amount in respect of each Grade of milk and out of the proceeds of this levy varying bonuses are payable on every gallon of Grades A, B and C milk which has to be disposed of for manufacture in creameries. The quantity of Grades A, B and C milk sold to creameries can be regarded as a "reserve" on the liquid market. Grade D milk, if sold, must be sent to creameries and can fairly be regarded as "surplus." The returns on such milk is under the Northern Ireland scheme supported by a subsidy under the Milk Act, 1934.

The suggestion that prices should be fixed for producers, as well as buyers has also been already embodied in the Northern Ireland scheme.

The Report which has been discussed here at some length may be obtained from H.M. Stationery Office, price 1/-. It is number 44 in the Series of Orange Books in Agricultural Marketing which are issued by the Ministry of Agriculture and Fisheries. It should be of great interest to milk producers in Northern Ireland since, its recommendations apart, it clarifies in a very lucid way many of the problems which are common to milk marketing organization in this country and Great Britain.

MARKETING SCHEMES.

AGRICULTURAL MARKETING (PIG INDUSTRY) ACT (N.I.), 1934 :—

PIG PRICES FOR DECEMBER, 1936.

The Pig Industry Council for Northern Ireland have announced the following prices for dead pigs sold by producers to curers in Northern Ireland in December, 1936. These prices are slightly below those of last month.

Weight Class. (Dead Weight)	Grade A.	Grade B	Grade C.	U.L. or U.F.
I c.1.1.14 to c.1.2.14	63/8	60/8	57/8	54/8
II c.1.2.15 to c.1.3.14	63/8	60/8	57/8	54/8
III c.1.3.15 to c.2.0.0	60/8	57/8	54/8	51/8
IV c.2.0.1 to c.2.0.14	54/8	51/8	48/8	45/8

U.L.—Under Grade A measurements. U.F.—Over Grade C measurements.

The price for partly black pigs between c.1.1.14 and c.2.0.14 will be 5/- per cwt. below the relevant grade price.

Authorised cuts :—

(a) Broken ham (dry, shank and/or shell bone break)—5% of the gross value of the carcase.

(b) Broken ham (wet break)—12½% of the gross value of the carcase.

(c) Shoulder-stuck carcase—3/- per shoulder affected.

The gross value of a carcase is the product of the dead weight and the relevant grade or other price per cwt.

Where portion of a pig carcase weighing between c.1.1.14 and c.2.0.14 is condemned and the existence of disease could not reasonably have been known to the producer at the time of slaughter the appropriate grade price shall apply. If the carcase is wholly condemned on account of disease, the existence of which could not reasonably have been known to the producer at the time of slaughter, the relevant Grade B price shall apply.

The foregoing prices do not apply in the case of (a) wholly black pigs, boars, rigs or stags, sucked sows, and pig carcases weighing under c.1.1.14 or over c.2.0.14, and (b) pigs visibly diagnosable as diseased before slaughter and subsequently condemned ; emaciated or screw pigs ; smelling pig carcases with definite indications of putrefaction and pig carcases badly abused or damaged before being handed over by the producer to the curer.

Prices for Wiltshire Pigs Sold on Direct Contract.

In the case of pigs sold alive under direct contract to Wiltshire curers the prices per dead cwt. payable for graded pigs delivered in respect of the month of December, are as follows :—

Weight Class (Dead Weight)	Grade 1.	Grade 2.	Grade 3.
Under c.1.0.14	57/8	57/8	57/8
c.1.0.14 to c.1.2.7	69/8	65/8	61/8
c.1.2.8 to c.1.2.10	66/8	62/8	58/8
c.1.2.11 to c.1.2.14	64/8	60/8	56/8
Over c.1.2.14	61/8	57/8	53/8

(The standard price, exclusive of bonus, for bacon pigs sold by contract in Great Britain during December is 12/1 per score dead weight, equivalent to 67/8 per cwt.).

Prices for Live Pigs Sold to the Pigs Marketing Board.

The following prices per live cwt. will be paid for live pigs by the Pigs Marketing Board on and from December 1, 1936, until further notice:—

Weight Class (Live Weight)	Grade 1	Grade II.	Grade III.	Unsuitable.
c.1.2.0 to c.1.3.14	52/6	50/–	47/6	41/–
c.1.3.15 to c.2.0.0	48/6	46/–	—	41/–
c.2.0.1 to c.2.1.14	46/–	43/6	—	41/–
c.2.1.15 to c.2.2.7	43/6	41/–	—	38/–
c.2.2.8 to c.2.2.21	40/–	37/6	—	34/–

These prices do not apply to live pigs outside the above weights, live pigs intended for breeding, live boars, live sucked sows, rigs or stags, injured or diseased pigs, live in-pig gilts, or live pigs sold (on contract registered with the Pig Industry Council) to curers in Northern Ireland. All other live pigs inside these weights can be sold only to the Board.

Authorised Deductions.

Every pig (dead or alive) sold to a curer or to the Pigs Marketing Board is subject to a contribution at present amounting to 1/-.

In addition to this amount, a deduction not exceeding 4d. per pig may be made in the case of sales to curers to cover insurance, so that the producer will not suffer financial loss if the carcase is condemned as unfit for human consumption. This deduction has hitherto been 6d. per pig.

In the case of pigs sold to the Board, there is a deduction of 2/6 per pig for marketing charges.

COST OF STANDARD PIG RATION.

The average retail cash price per cwt. of the standard ration, as calculated by the Ministry for the sixteen weeks' period ended 21st November, was 8/3½. This price was used, together with the realised prices of bacon and hams and of fresh meats over a set period, to determine the standard price of pigs for December.

The following is the ration upon which the feeding cost is based:—

Barley Meal	30%
Maize Meal	40%
Pollards (White)	20%
Extracted Soya Bean Meal	5%
Meat and Bone Meal (60% Protein) ...	5%

GRADING STATISTICS.

Table showing the percentages of pig carcases falling within the weight and grade classes indicated, during October, 1936.

Grade A.				Grade B.				Grade C.				Total
1	2	3	4	1	2	3	4	1	2	3	4	
17.48	16.84	2.87	.52	11.97	18.58	3.95	1.11	4.06	8.58	1.26	.31	87.53

UNGRADED CARCASES.

Under Grade A measurements. U.L.	Over Grade C measurements. U.F.	Wholly condemned. U1.	Wholly black, injured or damaged. U2.	Overweights, Underweights, boars, sows, etc. X.	Partly Black. Y.	
.04	3.04	.05	.62	8.68	.04	12.47
					Total	100%

The above figures have been calculated from the purchase and grading statements which the curers furnish to the Ministry.

The volume of trade during October showed another very considerable increase. With the increase in the Standard Prices the average price per carcase advanced by 5/1 to £4 16s. 1d., while the average price per cwt. was 2/6 higher at £2 18s. 1d. The average weight of each carcase was again heavier by 2 lbs. at c.1.2.17.

The following table gives the result of an analysis of the purchase and grading statements furnished by Wiltshire bacon curers in respect of live pigs delivered on direct contract by producers during the month of October, 1936.

Weight Class.	Grade 1.	Grade 2.	Grade 3.	Unsuitable.	Total.
Under c.1.0.14	.20	.33	.07	—	.60
c.1.0.14 to c.1.2.7	41.67	37.95	13.24	.16	93.02
c.1.2.8 to c.1.2.10	.13	1.01	.64	—	1.78
c.1.2.11 to c.1.2.14	.24	1.19	.70	—	2.13
Over c.1.2.14	.33	1.04	1.08	.02	2.47
Total	42.57	41.52	15.73	.18	100

The average price per cwt. in respect of these deliveries works out at £3 3s. 6d. after making allowance for levy deductions.

The average weight works out at c.1.1.18, the net average price per pig being £4 9s. 7d.

MARKETING OF EGGS ACT (NORTHERN IRELAND), 1936.

LICENSING OF EGG RETAILERS.

The attention of all retailers of eggs is drawn to the fact that the Ministry of Agriculture has made an Order whereby the 1st January, 1937, is to be the appointed day for the coming into operation of Sections 6 and 16 of the Marketing of Eggs Act (Northern Ireland), 1936.

The effect of this Order is that on and after the 1st January, 1937, any person who sells eggs by retail will require to take out an Egg Retailer's licence under the above-mentioned Act unless :—

(a) He is a poultry keeper who sells by retail only eggs which have been produced by his own hens or ducks. If, however, he purchases extra eggs for resale by retail to supplement his own supplies he must have a licence to enable him to sell the eggs which he has purchased ;

(b) he sells eggs for consumption as part of a meal or refreshment provided in a club, hotel, boarding house, restaurant or other place of refreshment.

The "sale of eggs by retail" includes the sale of :—

(i) eggs for use in manufacturing purposes ;

(ii) preserved, pickled and cold stored eggs ;

(iii) eggs sold to hotels, cafés, steamship companies, institutions, hospitals, etc. ;

(iv) eggs purchased from any source, for example, wholesale Class A licence holders, producers or imports.

A retailer who requires to be licensed must take out one of two licences, namely :—

(a) a "10s. fee" licence for those retailers who sell on the average (over a period of a year) more than 30 dozen eggs a week.

On the issue of this licence the retailer will require to submit a quarterly return to the Ministry of all his sales for the quarter, with a remittance for a fee equivalent to ¼d. a dozen on such sales.

NOTE.—Where a retailer obtains ALL his supplies of eggs from wholesale Class A licence holders a Memorandum of Arrangement can be completed between the latter and the retailer whereby the quarterly licence fees will be payable by the Class A licence holder. In that case no quarterly return or fees will be required by the Ministry from the retailer.

(b) a "£1 composite fee" licence for those retailers who sell on the average (over a period of a year) not more than 30 dozen eggs per

week. During the currency of this licence the retailer will not be required to make any quarterly returns or pay any further fees to the Ministry.

Application forms for either of the above licences can be obtained from any police barracks, Class A licence holder, or the Ministry.

Any person desiring further particulars regarding the licensing of retailers should apply as soon as possible to the Secretary, Ministry of Agriculture, Stormont, Belfast.

THE CATTLE INDUSTRY (EMERGENCY PROVISIONS) ACTS, 1934 AND 1935.

The total amount paid to Northern Ireland owners as "subsidy" up to and including 28th November, 1936, was £572,654 17s. 6d. and was in respect of 274,176 animals.

The return for the week ended 28th November shows that payments to Northern Ireland owners were in respect of 2,197 animals, including 1,594 steers, 561 heifers and 42 cow-heifers. The total realised prices of these animals was £27,996 8s. and the average price per head £12 15s. and per cwt. live weight 30/-. The total weight of the animals was 18,640 cwts. and the average weight of each beast 8 cwt. 1 qr. 26 lbs. The average amount of "subsidy" received per head was £2 2s. 5d.

THE TRADE AGREEMENT WITH ARGENTINA.

A new agreement has been concluded with Argentina to take the place of the agreement made in 1933. In view of the fact that Argentina supplies nearly two-thirds of the total quantity of beef inported into the United Kingdom the terms of the new agreement are of special interest to those engaged in the live stock industry. It is hoped to include a short article in next month's issue giving some details of the provisions of the agreement in so far as they affect agriculture.

AGRICULTURAL NOTES.

SEASONAL FARM NOTES.

Wheat.—Where, owing to unfavourable weather and soil conditions, it has not yet been possible to sow autumn wheat, this work should be done at the earliest possible date, provided the ground is in a fit state. If varieties such as Queen Wilhelmina, Squareheads Master, Victor and Yeoman are sown this month there is a reasonable hope of a satisfactory crop being obtained, except in very late districts, or on cold, heavy soils. A heavier seeding than normal should be given in the case of late sowings and the seed should be dressed before sowing with "Ceresan" or "Agrosan G" at the rate of from 5 to 8 ounces per cwt., to promote thicker and more vigorous brairds, and to prevent diseases such as smut and leaf stripe. A supply of home-grown wheat is a valuable asset on any farm, and where sowing has not been possible up to the present, farmers are advised to endeavour to get even a small area sown if soil conditions become suitable soon.

Ploughing.—The ploughing of stubble ground should be proceeded with, when soil conditions are suitable. Early ploughing, particularly on heavy soils, helps in obtaining a good tilth, and is also an aid in the suppression of weeds. By getting the ploughing done early in the season and thus exposing the soil to the beneficial effects of frost is, therefore, an indirect means of reducing labour on subsequent cultivations and on weedings. Where the stubbles are not sufficiently dry for ploughing, the plough should be kept going in lea ground.

Pastures.—If not already done, the application of phosphate manures to grassland should be carried out without delay. From 4 to 6 cwt. of high grade basic slag, Gafsa rock phosphate or Semsol per statute acre is a suitable dressing. On the lighter classes of soils, 1 cwt. 30 per cent. potash salts should be applied in addition to the phosphatic manure. Both manures may be mixed together before application.

The land should be thoroughly harrowed before the manures are applied, particularly if there is a mat of old grass or of fog on the surface. If this is not done, the full benefits from manuring will not be obtained. Harrowing is also beneficial even when there is not a thick mat or where manuring is not necessary, as it aerates the soil and promotes the better growth of the grasses.

Farmyard Manure.—During spells of frosty weather, labour can be usefully employed in carting farmyard manure to fields intended for root crops next season. The heap should be made as tidy and as compact as possible so that losses may be reduced to the minimum.

Surplus farmyard manure can best be used for application to meadow land intended for cutting. A moderate dressing of from 10 to 15 tons per statute acre is suitable for top-dressing purposes.

Potatoes.—The sorting of potatoes stored in houses should be completed and the seed for next year's planting placed in boxes when sorting is being done. Seed potatoes already in boxes should be examined occasionally and any diseased tubers and "rogues" removed; the colour of the sprout is a valuable aid in identifying varieties.

Farmers who intend to obtain fresh supplies of seed potatoes are reminded of the importance of placing orders early and of obtaining the seed from vigorous and healthy stocks. The vigour and health of a stock of potatoes are of as great importance as variety in obtaining good yields, and growers should plant only seed from stocks which showed marked freedom from diseases, such as leaf roll and mosaic. Lists giving the names and addresses of growers of healthy stocks of potatoes, along with those whose crops have been certified pure by the Ministry, may be obtained free, on request.

Particulars of the results obtained from potato variety tests carried out this season by the Agricultural Instructors are given on page 40 of this report.

Restoration of Old Hedges.—This is a convenient time to attend to farm hedges which have been neglected. It is a common practice to cut down old overgrown hedges leaving stumps from 2 to 3 feet high. This practice cannot be recommended as it does not lead to the formation of useful fences for some years afterwards. The proper treatment for such hedges is what is known as "laying." Full particulars regarding the "laying" of hedges are given on page 42 of this report.

Forestry.—The planting of forest trees, either for the provision of shelter belts or for timber production, may be carried out from now onwards when soil conditions are suitable. Full particulars regarding suitable species of trees and methods of planting are given in Leaflets Nos. 62 and 72. Farmers are reminded that supplies of young forest trees of various species can be obtained from the Ministry's nurseries in lots of 1,000 or more at the reduced price of 30/- per 1,000. Copies of this Scheme and application forms will be sent free, on request.

SEASONAL LIVESTOCK NOTES.

Fibre Content of Pollards.—The attention of stock feeders is drawn to the article on the fibre content of pollards, sharps and middlings which appears on page 37 of this issue. There are a number of inferior samples of these foods on the market and it is only by studying the fibre content that an indication of their feeding value can be obtained. The higher the

fibre content of pollards, the lower is the feeding value and purchasers are strongly urged to select only samples which have a fibre content of not more than 6 per cent. The Fertilisers and Feeding Stuffs' Act requires all sellers of pollards to give at the time of sale a statement showing the precentage of fibre contained in samples offered, and buyers should obtain this information in every case.

Sheep.—Breeding sheep should be kept in good condition from now onwards so as to ensure good lambing results. As a supplement to the grass, a small allowance of a mixture of concentrates such as equal parts oats, bran, and linseed cake or decorticated earthnut cake, along with a few turnips daily, should be given. The feeding of too large a quantity of turnips to in-lamb ewes should, however, be avoided, as should the feeding of frosted roots. It is also an advantage to allow the flock access to a supply of rock salt.

Liver Fluke and Foot Rot Diseases.—If profitable results are to be obtained from the flock, diseases such as liver fluke and foot rot should be rigidly guarded against. To prevent liver fluke disease, sheep should be kept off low-lying pastures and grazed on the higher, well-drained fields, while dosing with carbon tetrachloride capsules shoud be carried out periodically. Full particulars regarding the control of this disease are given in Leaflet No. 24. Should any of the animals show signs of lameness, those in the flock should be carefully examined for foot rot. If this trouble is neglected and suppuration allowed to set in, the difficulty of effecting a cure is increased. A simple and effective treatment for foot rot is the application of a solution made by dissolving 1 lb. copper sulphate ("blue-stone") in 1 gallon of water, after the horn part of the hoof has been well pared with a sharp knife.

Care of Bulls.—Good feeding and proper management of breeding bulls are necessary throughout the winter to keep the animals in hard breeding condition and thus to maintain their fruitfulness. A suitable daily ration for a yearling stock bull in winter consists of about 4 stones of roots, 6 lb. cake and meals and as much hay as is eaten. For older bulls, slightly increased quantities of these foods may be necessary, but the tendency of older animals to get excessively heavy should not be overlooked, and the feeding regulated accordingly. A suitable mixture of cake and meals for breeding bulls is equal parts crushed oats, maize meal, bran and palm kernel cake.

During the winter, bulls should be groomed daily with a curry comb and brush. Grooming stimulates the circulation of the blood and aids in food digestion and in the maintenance of good health. A periodical application of a non-poisonous disinfectant to the animal's coat is also necessary as a

preventive against lice. Lice may be destroyed by giving two or three applications, at weekly intervals, of a 5 per cent. solution (1 part in 20 parts water) of Jeyes' Fluid or of a carbolic sheep dip.

Bulls should also be given daily exercise in the open air so that they may be kept in a fit, active condition. Further information on the feeding and management of bulls is given in Leaflet No. 61.

Feeding and Management of Boars.—Boars kept for breeding purposes also require particular attention during the winter, if satisfactory results are to be obtained. A boar that is underfed and overworked cannot be expected to breed good-sized litters, no matter how well the sow is cared for. The feeding should be such as will keep the boar in a fit, hard condition, without becoming overfat. A suitable meal mixture for this purpose is 2 parts by weight bran, 4 parts by weight brown pollard, 3 parts by weight maize meal and 1 part by weight high grade meat meal or extracted soya bean meal. A mineral mixture consisting of 3 parts by weight ground limestone or chalk and 1 part by weight common salt should be added at the rate of 1 lb. per cwt. of meal mixture where high grade meat meal is fed, and at the rate of 2 lb. per cwt. of meal mixture, if soya bean meal is used.

The boar should have access to a run out on fresh, clean pasture so that sufficient exercise may be provided. The feeding of green food, particularly during the winter months, will aid in keeping the boar in good health.

SEASONAL GARDEN AND ORCHARD NOTES.

Planting Fruit Trees.—The planting of fruit trees and bushes may be continued whenever the ground is in suitable condition. The condition of the soil is much more important than the date of planting, as it is well known that none of the hardy trees and bushes develop new roots after planting in the autumn or winter until the soil warms up in the spring. Trees and bushes generally start to form new roots about the time the buds commence to move; therefore, it is advisible to get the planting of gooseberry bushes and pear and plum trees completed towards the end of February, and apple trees early in March. When the soil breaks up readily and sifts easily between the roots of the plants, conditions for planting may be regarded as suitable.

Too much care cannot be taken in getting the soil well sifted through the roots of the trees and bushes at the time of planting. In the process of lifting and transporting the trees, practically all the fine feeding roots are destroyed and the plant has to develop a new feeding system in the fresh site. It is only when the soil is in close contact with the main roots of the plant that new feeding roots are quickly formed.

Firm planting is essential to success and the soil should be tramped with the feet as the work of filling in around the roots proceeds. If a layer of soil is kept between the roots and the feet, the roots will not be damaged.

"Heeling-in".—If the trees are received from the nursery at a time when the soil is not in a suitable condition for planting, they should be unpacked and "heeled-in." This may be done by opening a trench about 2 feet wide and one foot deep. The trench should be opened in a vacant piece of ground on an open site which is not subject to flooding. The roots of the trees should be placed carefully in the bottom of the trench and, with the trees in an upright position, the soil should be returned to the trench and tramped down slightly. The trees can remain "heeled-in" until soil conditions are suitable for planting them out. If very severe frosty weather prevails when the trees are received, they should not be unpacked immediately but placed in a frost proof shed until the frost disappears, when the package may be opened and the trees "heeled-in" as advised above.

Pruning.—The pruning of fruit trees and bushes should be undertaken on all occasions when the weather is suitable so that this work may be completed to allow of winter spraying being carried out in good time.

In pruning apple trees, all crossing and crowding branches should be removed, as well as all dead and badly diseased ones. When the fruiting spurs have become long they should be shortened back to a fruit bud and, if overcrowded, thinned out. When the trees have grown so tall as to make efficient spraying difficult, some of the tallest branches should be shortened back to a fork in the branch or a large spur. Where branches which are over an inch in diameter have to be removed, a fine-toothed saw should be used for the purpose and the cut made as closely as possible to the shoot that is to be retained. If short stubs of wood are left they may act as a harbour for diseases and pests, or there may arise from them a number of strong-growing shoots which may upset the fruiting balance of the trees.

Cuts which are more than one inch in diameter should be coated immediately with some preservative such as a good, rapid drying paint. Tar is sometimes used for this purpose, but it is not as lasting as the following preparation:—To 2 lb. of white lead paste (as bought) add two teaspoonsful of paste driers and 2 tablespoonsful of raw linseed oil; stir till thoroughly mixed, then add two tablespoonsful of turpentine and mix well. This should be applied liberally to the cut surfaces with a paint brush while the surfaces of the cuts are dry.

Full particulars regarding the pruning of apple trees are given in Leaflet No. 34.

In pruning gooseberry, and red and white currant bushes, the young shoots should be thinned out and the superfluous ones cut back to three or four buds. In the case of black currants, if some of the older branches were

removed after the fruit was gathered, there should be little to do now beyond thinning out the young shoots, where these are too numerous.

Winter Spraying.—The spraying of plum and damson trees, and apple trees of the varieties Beauty of Bath, Grenadier and Newton Wonder, with tar oil spray should be completed before the middle of January, as if done later than this there is a risk of injury being caused to the buds.

Marketing of Apples.—The results of research work in the storage of fruit are being applied in practice by the use of gas stores and this development has changed the whole organisation of the marketing of late varieties of apples. Apples stored in these specially constructed buildings can be placed on the market during the spring and early summer in as green and as fresh a condition as they were when pulled.

This means that growers in Northern Ireland now have to compete in the markets with apples grown in the South of England which are also of the quality and in the condition desired.

As there are at present very large quantities of Bramley's Seedling apples in "Gas Store" in the main apple growing districts of England which will probably be placed on the market while they are still of an attractive green colour, growers in Northern Ireland should market their fruit before it shows any signs of ripening, if they are to get the best financial returns from their crops. The bulk of the fruit in "Gas Store" is in the South and East of England, and it is probable that markets within reasonable distances of such stores will likely prove to be uncertain as regards being good centres for the marketing of Northern Ireland apples this year.

SEASONAL POULTRY-KEEPING NOTES.

Hatching.—Hatching of eggs from general purpose breeds should be proceeded with from now onwards so that pullets for autumn egg-production and early table chickens may be obtained.

Feeding and Management of Breeding Stock.—The aim of the breeder should be to obtain large strong-shelled eggs having strong germs which will give rise to sturdy chickens. To attain this aim, the breeding stock must be of vigorous constitution and kept in a hard, fit breeding condition. If the birds are allowed to become overfat there is a serious risk of weakly germs being produced, or of excessive infertility. Adequate exercise on free range and suitable feeding will prevent the birds from becoming excessively fat and will maintain them in a fit condition for breeding.

A suitable mash for breeding birds is :—

4 parts by weight bran.
2 ,, ,, ,, pollard.
2 ,, ,, ,, maize meal.
1 part ,, ,, Sussex ground oats.
1 ,, ,, ,, fish meal or meat meal.

If milk is available, the fish meal or meat meal may be omitted. The feeding of milk is recommended as it is a valuable aid in keeping the birds in a fit condition. The addition of about 1 quart of good quality cod liver oil to each cwt. of mash is also recommended as it aids in improving fertility and hatchability. The grain ration for the breeding stock should contain some wheat and cracked maize. Further information on the feeding and management of breeding stock is given in Leaflet No. 83.

Selection of Eggs for Hatching.—The selection of eggs for hatching should receive particular attention. Eggs which are less than two ounces in weight should not be set, nor should those which are badly shaped or which have thin shells. Eggs for hatching should be set as soon as possible after being laid, as stale eggs seldom hatch satisfactorily. Hatching eggs which are dirty should on no account be washed, but merely wiped with a damp cloth.

The provision of a patch of cinders outside the door of the house in which the birds are accommodated, and the maintenance of the litter and nesting material in a fresh, clean condition, will go a long way in preventing the appearance of soiled and stained eggs.

Purchase of Eggs for Hatching.—When purchasing eggs for hatching, an assurance should be obtained that they are from birds which are free from Bacillary White Diarrhoea. This disease is still responsible for considerable losses in chicken flocks each year, and it is only by breeding from stock that is free from the disease that losses can be avoided. The most progressive poultry keepers have their birds tested to ensure freedom from Bacillary White Diarrhoea, and, accordingly, there is now no difficulty in obtaining supplies of hatching eggs from stock which is free from this disease.

In addition to ensuring that the eggs are from disease-free stock, it is also a wise plan to visit the farm from which the eggs are to be obtained, so that the breeding stock may be inspected. The appearance of the birds and the system of feeding and managemnt adoptd are often helpful in forecasting the quality of the chickens which will be produced.

Readers are reminded that hatching eggs from selected blood-tested birds can be obtained from Accredited Poultry Farms and from County Poultry Stations. Lists, giving the names and addresses of the owners of Accredited Poultry Farms can now be obtained from the Ministry, on request. A list of holders of Poultry Stations can be obtained from the Secretary of the Committee of Agriculture. The names and addresses of Secretaries of County Committees of Agriculture are given on page 39.

Testing of Incubators.—The importance of testing incubators to ensure that they are in perfect working order before hatching commences may again be stressed. If the capsule and thermometer are not working properly

satisfactory results cannot be obtained. The capsule may be tested by holding it between the fingers and thumb in front of a fire or by placing it in a vessel of hot water; if the sides expand under the influence of heat it is in order. The thermometer should be tested against a clinical thermometer. Any chemist will test the thermometer. Further hints on the management of incubators are given in Leaflet No. 20 which deals with the hatching and rearing of chickens.

Laying Flock.—Pullets which have been in lay throughout the autumn are very liable to moult at this season, particularly if they are allowed to become low in condition. Good feeding and shelter from bleak winds will assist in preventing moulting as will roomy, well ventilated and clean houses. The birds should be encouraged to eat sufficient mash for their requirements, otherwise moulting may occur. A mid-day feed of mash, wet with separated milk if available, should be given, while the dry mash hoppers should be left open to the birds at all times.

Insect Pests.—Infestations of insect pests such as lice and red mite are common causes of moulting and a continual watch should be kept for the presence of these pests. When these parasites are found, the house should be thoroughly cleaned out, particular attention being paid to corners, crevices, perch sockets, etc., as it is in such places that these pests usually hide. A convenient method of destroying lice is to paint the tops of the perches with nicotine sulphate about half-an-hour before the birds go to roost in the evening. Nicotine sulphate can be obtained from any chemist. Red mites can be destroyed by applying a dressing of creosote to the interior of the house.

Marketing of Dead Poultry.—While the majority of live poultry for the Christmas trade will have been marketed by the time this report appears, poultry-keepers who market the birds dead are reminded of the importance of fasting the birds for at least 12 hours before killing, to prevent discolouration of the flesh afterwards. Useful hints on the preparation and packing of dead poultry for market are given in Leaflet No. 18.

SELECTION OF POULTRY BREEDING STOCK.

The following is reproduced from the Report on the 1935/36 Egg-Laying Test at Stormont, which was issued recently, as it is a subject of the utmost importance to all poultry keepers; copies of the Report may be obtained from the Ministry on request, free of charge.

"This subject has been discussed on many occasions, and in the reports on many of the previous tests, but no apology is made for referring to it again, as the proper selection of the breeding stock must always remain the foundation of successful poultry keeping, whether the object is to breed pullets for

a laying test or for replacements on the home farm. Much has been said in this report about mortality, but it is feared that many breeders are more concerned about finding remedies for diseases and maladies than they are about the fundamental principles of their business as poultry breeders. If breeders would make their objective the development of strains of birds which are large, vigorous, healthy and of good constitution, the problem of disease, derangement and death would sink into insignificence.

Over one-third of the total deaths recorded in the laying tests are due to derangements of the egg-producing organs, leading to peritonitis. These derangements invariably afflict the small, fine-boned birds, which have limited resources of vigour and vitality, at the time when these resources are used up. In other words, these birds not being endowed with adequate vitality to enable them to continue laying and of giving expression to that characteristic fail to withstand the strain and a break-down occurs. This usually takes place during the later months of the test period.

It should be apparent from the foregoing that the problem of mortality is largely one to be solved by the breeder; it is not, as is sometimes suggested, connected directly with the nature of the ground at the laying test, with the system of feeding, or with the system of rearing, if that is a sane one. There are at least four practices connected with the selection and mating of breeding stock which are condemned unconditionally. These are:—1, Selecting chiefly, if not solely, on the basis of egg records; 2, Selecting on the basis of fine pelvic bones; 3, Breeding from immature pullets and cockerels; 4, Mating closely-related males and females.

Egg records have probably done more harm than good to the poultry industry, not because they are not useful if properly applied, but because they have been abused. They were ever a temptation, a snare and a delusion, and remain so still. While the weaknesses of human nature remain, and one poultry-keeper strives to breed pullets which will lay more eggs than those bred by his neighbour, the lure of records will appeal, and the temptation to go to extremes will prevail. It is the craze for extremes that has brought discredit to the egg record. Perhaps when it is realised that breeding for high egg production does not follow necessarily the simple plan of "daughter better than mother", the records will be used as they ought to be.

There could be no greater folly than the mating of a hen which had nothing to commend her except an egg record, except perhaps the use of a bad cockerel for breeding which is the son of a bad hen having a good record. The quality and physical attributes of the bird, male or female, should always be the first consideration when selecting breeding stock, and no reference should be made to the egg records until the birds which satisfy the standards in these respects are selected. By adopting this system the "weeds" having good records will not find a place in the breeding pen.

It is admitted freely that egg records are a necessary, if not an essential, preliminary in breeding for egg-production, but it must never be forgotten that they are a two-edged weapon which, if not wielded properly, will inhibit rather than encourage progress.

Culling is a necessary and important practice on every poultry farm. It is a practice which should proceed continuously from hatching time onwards, but if rigid and ruthless culling of the breeding stock is practised there will be fewer culls subsequently than will be the case if breeding stock of doubtful quality is used. From the economic point of view, therefore, is not drastic culling of the breeding stock a sound proposition?

The vogue of the pliable pelvic bones is on the decline, and its demise will be welcomed. Much of the deterioration in size and constitutional vigour of certain strains can be attributed to it. Fine pelvic bones are simply part of a deficient skeleton, and a deficient skeleton cannot support an efficient bird. Seekers after fine pliable pelvics failed in many cases to appreciate the fact that birds which possessed them were small, with fine shanks and a poor constitution.

The quality of the pelvic bones and their position with respect to one another are not, as was commonly believed, a true criterion on which to base an estimate of a bird's ability to lay. This theory has been definitely exploded by Knox and Quinn* who have made an extensive study of the physical characters which are popularly used by poultry keepers to estimate egg-production ability. Of eighteen characters studied, they found that the quality of the pelvic bones and the quality of the shanks were of no assistance whatever in determining egg-production; but that head quality, abdomen quality, good width of back, quality of eye, time of moult, colour of shanks, quality of comb and depth of body, were of value in that respect.

The only sound purpose in ascertaining the position of the pelvic bones is to determine whether or not a bird is to lay. Cullers who were exponents of the pelvic bones system were oftentimes misled as to its value by the fact that a culled flock produced as many eggs after culling as before, and that few, if any, eggs were obtained from the culls. This only showed that by the method the birds in lay could be identified, but it was wrong to assume that the birds not in lay at that particular time were not profitable to keep. The quality of the abdomen is of importance. It should be soft and silky to the touch, not hard and gristly.

Immature birds of either sex should never be mated. The longevity factor cannot be bred with certainty into a strain unless fully matured hens and cocks are used for breeding. No one wishes chickens to be hatched as orphans or to become orphans in early life, but the practice of breeding from immature

* Poultry Science 15 (1936) No. 1, pages 28-31. Reviewed in Experimental Station Record 75 (1936) No. 3, page 393.

birds before they have endured the rigours of modern requirements as regards egg-production is inviting such to happen. The superiority of the pullets which were bred at the Pedigree Breeding Station over those bred on home farms, particularly in respect of ability to live and lay, has been referred to in this report, and in that on the previous test. There is little doubt that these birds obtained an advantage from the fact that their dams were all at least 1½ years old and had passed successfully through the testing period of a year's heavy laying. Have all the pullets sent to the tests from home farms been bred from old hens? If not, they should be.

The mating of closely related males and females leads to deterioration all round. When this is practised there is a high proportion of culls, and in the hands of the average poultry-keeper the result is likely to be unsatisfactory. In a paper read at the Sixth World's Poultry Congress in Germany, two American workers* reported the results of a study of the effects of inbreeding in the case of the White Leghorn. They found that while there was no general or significant increase in the mortality during the first eight weeks after hatching, the pullet year mortality showed a rapid increase as the intensity of inbreeding increased, despite the fact that a very rigid selection of the breeding stock was made; also that there was a general, but not a consistent, decrease in the number of eggs laid during a given period, as the inbreeding progressed.

The following extract from the Annual Report for 1934/'5† of the Director of The Agricultural Experiment Station, Wisconsin, U.S.A., sums up the problem of mortality and gives a hint as to how the longevity factor may be bred into a strain. "The value of a laying hen depends not alone on the rate at which she lays eggs, but also on the length of time she maintains satisfactory production. Feeding for heavy production in the modern manner usually results in a good yield of eggs for a time, but unfortunately this is often accomplished at the expense of a heavy death loss. Some pullets start laying at a rapid rate, but lack stamina to finish the laying year, and consequently are easy prey for diseases and parasites. Many others sustain production throughout the first year, but in so doing "burn" themselves out and are of little value as producers or breeders the second year.

Plainly it would be to the advantage of poultrymen to have high producing hens with the stamina to live and lay through two or more years. Not only would this avoid the pecuniary loss involved in the death of many hens, but it would probably encourage the breeding of better stock. Yearling hens are more desirable than pullets for breeding purposes since they have proved their value (particularly if they are trap-nested).

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* N. F. Waters and W. V. Lambert: Inbreeding in the White Leghorn Fowl. Session Papers, Sixth World's Poultry Congress, Leipzig, 1936.

† To-day's Science and To-morrow's Farming. Bulletin 435. Agr. Expr Stn., Wisconsin, March, 1936.

There are indications that productive longevity is an inherited trait. Trap-nesting, pedigree hatching, and progeny testing in the Station flocks for the past 25 years have produced a number of superior breeding individuals and families. The examples given indicate there is hope of reducing death losses among laying pullets and hens by breeding strains which have the vigour to continue heavy egg-production over a period of years."

FIBRE CONTENT OF WHEAT OFFALS—POLLARDS, SHARPS, MIDDLINGS.

In a survey of representative samples of pollards drawn at merchants premises throughout Northern Ireland, which the Ministry made recently, it it was found that the fibre content of individual samples varied considerably. While in some samples the proportion of fibre was less than 3 per cent., in others it was over 9 per cent.

Generally speaking, the fibre content of pollards, sharps and middlings, is a good indication of the feeding value of these foods. The lower the fibre content the higher is the feeding value. Subject to this qualification, the colour of these offals is not of importance, the brown pollards being as good as the white.

The Fertilisers and Feeding Stuffs Act makes it obligatory for a merchant, when selling pollards and other wheat offals, to give the purchaser a statement showing the percentage of fibre contained in the different samples. This information may be given (a) by stating it on the invoice, (b) by printing it on the bag, (c) by stating it on a label attached to the bag. In practically all cases of sales of wheat offals at the present time this provision of the Act is being complied with, but it is believed that many purchasers of these foods do not appreciate the significance of the information. The Act does not stipulate the maximum quantity of fibre which pollard should contain so as to entitle the seller to sell it as such; accordingly, it is incumbent on the purchaser to satisfy himself that the sample he proposes to buy is of good quality and not a sample of bran which is finely ground and sold as pollard. It should be realised that the fibre content is not affected by fineness of grinding, so that it is possible to obtain so-called pollard which in reality is finely ground bran. In such a case the fibre content as declared by the seller will enable the buyer to decide whether or not it is finely ground bran. If the fibre content is high, say 7 to 9 per cent., the sample cannot be properly described as high grade pollard but approximates closely to bran, although in appearance it may not look like bran. Samples of so-called pollards which have a high fibre content are usually obtainable at a cheaper price than those of good quality having a low fibre content. By purchasing solely on the basis of price and not taking the fibre content into consideration,

the farmer is not necessarily getting the best value for money, as it must be realised that foods having a higher proportion of fibre, which is an indigestible constituent, have a lower feeding value than those in which the fibre content is lower. It, therefore, behoves the purchaser to consider carefully the fibre content and to take it into account when comparing prices and values.

The Ministry does not advise the purchase of pollards which contain more than from 5 to 6 per cent. of fibre, no matter at what price they are offered. If it is intended to buy samples containing more than 6 per cent. fibre they should be bought as bran and used for the purpose and in the proportion applicable to bran; they should not be regarded as being of a feeding value equivalent to that of pollard of good quality.

All purchasers of wheat offals, particularly pollards, sharps and middlings, are strongly urged to select only samples which have a fibre content below 6 per cent. It will be found by so doing that best value for money will be provided even though the price per cwt. is slightly higher than that at which the poorer grades can be obtained. Full use should be made in all cases of the Fertilisers and Feeding Stuffs Act by requiring the statement of fibre content to be made at the time of purchase and by rejecting from consideration all samples which have a fibre content in excess of 6 per cent.

ANNOUNCEMENTS AND REMINDERS.

GENERAL.

LEAFLETS.—Copies of the leaflets mentioned in this Report may be obtained free, on request. A complete list of the Ministry's leaflets and other publications is given on the back page of the cover of this Report.

INSPECTION OF BULLS FOR LICENCES.—The inspection for licences of bulls which were born during the months of January, February, March, April, May and June, 1936, will be carried out during January next. Applications for inspection for licences should be lodged with the Ministry not later than the 31st December. Application forms may be obtained from the Ministry, or from any Police Barracks.

LICENSING OF BOARS.—Inspections for licences of boars, farrowed in July, August and September, 1936, will also be carried out early in January. Applications for inspections should be sent to the Ministry as soon as possible, but not later than the 31st December next.

SCHOOLS.—The next session at the Ulster Dairy School, Cookstown, and at the North-West School, Strabane, begins on the 5th January, 1937. Par-

ticulars regarding the courses of instruction provided at these Schools are given in the prospectuses, copies of which may be had from the Ministry free, on request.

Accredited Poultry Farms.—Lists giving the names and addresses of owners of Accredited Poultry Farms have now been published, and can be obtained free, on request, from the Ministry. Hatching eggs from stock which have passed the test for Bacillary White Diarrhoea can be obtained from these farms.

County Poultry Stations.—Lists of holders of County Poultry Stations are also available now and can be obtained from the Secretary, Committee of Agriculture for the County. The birds on these stations have also all passed the test for Bacillary White Diarrhoea.

Report of Fourteenth Egg-Laying Test at Stormont.—Copies of this report are now available and will be sent free to those applying for them. This report contains useful information on present-day breeding problems, in addition to full particulars of the performances of the birds which competed in the test.

Supply of Forest Trees.—Farmers can now obtain supplies of young forest trees from the Ministry's nurseries at reduced prices, under the Forestry Scheme. Full particulars will be sent, on request.

NAMES AND ADDRESSES OF SECRETARIES OF COUNTY COMMITTEES OF AGRICULTURE.

Antrim.—A. B. Clarke, B.A., County Courthouse, Crumlin Road, Belfast.
Armagh.—S. Jordan, B.Agr., Agricultural Organiser, Russell St., Armagh.
Down.—J. L. McWhinney, A.R.C.Sc.I., B.Sc., Agricultural Organiser, Northern Bank Chambers, May Street, Belfast.
Fermanagh.—W. T. McClintock, B.Agr., Agricultural Organiser, Courthouse, Enniskillen.
Londonderry.—T. K. Caldwell, Courthouse, Coleraine.
Tyrone.—W. Walsh, Courthouse, Omagh.

LECTURES.

The following lectures have been arranged by County Armagh Committee of Agriculture:—

Day and Date.	Centre.	Time.	Subject.
Wednesday, 16th Decr.	Eshwary P.E. School	8 p.m.	Results of Agricultural Experiments.
Wednesday, 16th Decr.	Mountnorris Manse Hall.	7-30 p.m.	Poultry-keeping.
Thursday, 17th Decr.	Mullaghmore P.E. School.	7-30 p.m.	,,

BROADCAST TALKS.

The following talks on Agricultural subjects will be given from the Belfast Station of the British Broadcasting Corporation :—

Date.	Time.	Title of Talk.	Speaker.
Dec., 21	7-30 p.m.	Pig Disease Problems	H. G. Lamont, Esq., M.Sc., M.R.C.V.S., Ministry of Agriculture.
Jan., 8	7-30 p.m.	The Bacteriologist and the Control of Dairying Problems.	N. R. Knowles, Esq., M.Sc., Queen's University, Belfast.

RESULTS OF POTATO VARIETY EXPERIMENTS.

To ascertain the cropping capabilities and suitability of some of the newer varieties of potatoes as compared with some of the older and proved kinds, variety experiments were again arranged during the past season by the Agricultural Instructors. Two series of tests were carried out, one with early, and the other with main crop varieties.

EARLY VARIETIES.—Six early varieties were tested at 5 centres, and the average results obtained from these centres are given in the following table; for comparison purposes the average total yields obtained from the two previous year's trials are also included, along with the true average total yield in respect of the three years' trials.

VARIETY.	1936 (5 centres)				1935 (9 centres)	1934 (11 centres)	1934-1936 (25 centres)
	Ware	Seed	Chats and Disease	Total	Total Yield	Total Yield	True Average Total Yield
	t. c.	t. c.	t. c.	t. c.	t. c.	t. c.	t. c.
Dunbar Yeoman	9 8	1 10	0 15	11 13	11 16	12 11	12 2
Arran Pilot	11 14	1 16	1 0	14 10	11 14	11 5	12 1
British Queen	8 13	3 7	1 8	13 8	11 6	11 3	11 13
Ballydoon	10 10	1 19	0 14	13 3	11 4	11 2	11 11
Di Vernon	6 14	2 12	1 8	10 14	11 8	10 10	10 17
May Queen	8 19	2 2	0 16	11 17	11 8	9 4	10 10

It will be observed that the varieties Dunbar, Yeoman and Arran Pilot, gave almost identical yields when the true average total yields of the three years' tests are considered. Arran Pilot gave a greater total yield than Dunbar Yeoman in last season's tests.

Dunbar Yeoman is a comparatively new, first early variety with tubers having lemon coloured flesh and of good eating quality. Arran Pilot is one of the earliest varieties of the May Queen type. The tubers are plump and long shaped, and are very suitable for meeting the requirements of the English market.

British Queen and Ballydoon gave almost similar average total yields throughout the three years' tests; the latter is an immune variety which can be used to replace the non-immune British Queen variety. It matures earlier than British Queen.

Main Crop Varieties.—The tests with main crop varieties were carried out with seven varieties at 10 centres in 1936. The average results obtained, along with the average total yields obtained in the two previous years' trials, are as follows:—

VARIETY	1936 (10 centres)				1935 (11 centres)	1934 (10 centres)	1934-1936 (31 centres)
	Ware	Seed	Chats and Diseased	Total	Total Yield	Total Yield	True average Total yield
	t. c.	t. c.	t. c.	t. c.	t. c.	t. c.	t. c.
Majestic	10 18	1 16	1 8	14 2	17 17	16 18	16 7
Arran Cairn	7 13	2 4	2 13	12 10	18 9	16 8	15 17
Arran Consul	11 1	2 4	1 11	14 16	16 18	15 13	15 16
Up-to-Date	8 10	2 0	1 17	12 7	17 13	15 5	15 3
Arran Victory	9 19	2 0	0 17	12 16	15 10	14 12	14 6
Gladstone	10 3	2 3	1 0	13 6	—	—	—
Kerr's Pink	9 3	2 3	1 4	12 10	15 17	—	—

It will be seen that Majestic has given the highest average total yield in respect of the three years' tests. The variety Arran Cairn, which gave the heaviest yield last season, and Arran Consul gave almost identical average yields in the three years' trials. In this season's test, however, the total average yield from Arran Cairn was considerably below that of Majestic and Arran Consul.

The new variety Gladstone was included in these trials last year for the first time, and gave a satisfactory yield. This is an early maincrop immune variety which produces kidney-shaped tubers. The tubers are white-skinned with splashes of pink, and in both shape and colour closely resemble those of the non-immune variety King Edward.

Further information and descriptive notes relating to the newer varieties which were included in these trials are given in Leaflet No. 7—Potato Trials. Lists giving the names and addresses of growers of some of the varieties

mentioned, along with those whose crops have been certified by the Ministry and show a high degree of freedom from diseases, such as Leaf Roll and Mosaic, can be obtained from the Ministry free, on request.

RESTORATION OF OLD HEDGES.

A hedge forms a very useful farm fence so long as it is kept in good condition, for it not only acts as an efficient fence, but also affords considerable shelter to stock.

When hedges are not trimmed annually and given proper attention gaps and holes appear and the hedges become practically useless as fences against sheep and cattle. With proper treatment, however, such hedges can be restored.

Over-grown, patchy hedges are often hacked down leaving the old stumps from one to two feet high. This practice is to be condemned as there is no effective fence for some years and no provision is made for filling old gaps or openings. The proper treatment for such hedges is what is known as "laying," that is the bending and wattling of selected young shoots horizontally along the line of the hedge. "Laying" can be carried out now or at any convenient time before the end of March. As a first step all undesirable plants, such as Bramble, Dog Rose, Honeysuckle, etc., and all dead or decaying stumps should be cut out, the "sheugh" cleaned out, and the ditch repaired if necessary.

The young growths for "laying" along the hedge should be chosen from the most vigorous stools and should be straight and as long as possible. Shoots arising from near the base of the stool are to be preferred. Others not required should be cut out leaving stumps from 2 to 3 feet high. It is not advisable, however, to cut out too many of the young shoots in the first instance as any surplus can easily be removed when the "laying" has been completed.

If there are gaps or holes in the hedge, or if the stumps are more than 2 feet apart, stakes, cut from the surplus material from the hedge, should be driven into the ditch so as to have a continuous row of stumps of stakes not more than 2 feet apart. The selected young shoots should then be cut halfway through with an upward cut whenever possible, bent downwards and wattled or interlaced between the stumps. It is a mistake to put in too much material as sufficient room must be left to allow for young growth.

When the "laying" has been completed the smaller protruding twigs should be trimmed, and if there is any tendency on the part of the "laid" shoots to spring upwards they may be secured by interweaving thin hazel or sally rods between the tops of the stakes. This is preferable to the practice

of placing sods on the shoots, as the rods add additional strength to the top of the hedge.

Once a hedge has been properly "laid" it can be kept in good condition for many years by annual trimming, which should be carried out with a proper, well-sharpened hedge knife, and not with a hook or a slasher. All cutting should be done from the bottom upwards with an upward swing of the knife, and on no account with a downward stroke. The ultimate object of the trimming should be to form a wedge-shaped hedge, wide at the foot and narrow at the top.

REGISTRATION OF ACCREDITED POULTRY FARMS.

Poultry-keepers will remember that the Ministry issued in 1935 a Register of Accredited Poultry Farms, the object of which was to make easily available a list of names of reliable breeders in Northern Ireland, who could supply hatching eggs and birds from blood-tested stock of a definite standard of quality. The growth of the poultry-keeping industry in Northern Ireland has made it increasingly important that poultry-keepers should maintain the present high standard of their poultry as regards quality and freedom from disease, and while it is recognised that importations from cross-channel sources may be necessary for the introduction of new blood, it is felt that Northern Ireland breeders can supply poultry-keepers with hatching eggs and birds which compare very favourably with the best obtainable from Great Britain, in respect of quality and freedom from disease.

The Ministry has, therefore, compiled a second and larger issue of the Register for the hatching season 1936-'37. The owners of the farms included in this Register have complied with the conditions for registration laid down in the Ministry's Scheme, which are designed to ensure that the entire adult stock on each farm accepted for registration has been blood-tested, and so far as can be ascertained, is free from Bacillary White Diarrhoea, and that the breeding stock is in every other respect healthy and consists only of pure-bred poultry of a good standard of quality. Furthermore, registered breeders have also undertaken that only stock which has passed the blood test for Bacillary White Diarrhoea will be brought unto their farms, and that pullets which are less than one year old will not be included in the breeding pens. Registered breeders must also undertake to have their stock tested once annually, and if reactors are found, to have further tests made until it has been clearly established that the flocks are free from disease. It will, therefore, be realised that poultry-keepers may purchase hatching eggs and stock from registered farms with a minimum of risk as regards disease.

Copies of the Register are now available, and may be obtained, free and post free, on application to The Secretary, Ministry of Agriculture, Stormont, Belfast.

FOURTEENTH EGG LAYING TEST AT STORMONT.

ANNUAL MEETING OF BREEDERS.

The Annual Meeting of Poultry Breeders in connection with the Stormont Egg-Laying Test was held in the Minor Hall, Y.M.C.A., Wellington Place, Belfast, on Friday, the 4th instant, the chair being taken by Dr. G. Scott Robertson, Secretary to the Ministry of Agriculture.

An Address on "The Breeding and Management of Poultry for Stamina" was given by Miss E. E. Kidd, Poultry Adviser to the Millers' Mutual Association, and formerly Poultry Instructor for the County of Surrey, and the Cups and Medals won at the last Egg-Laying Test were presented by Mrs. Mulholland, wife of Captain The Right Honourable H. R. H. Mulholland, M.P., Speaker of the House of Commons.

In opening the meeting Dr. Robertson reviewed briefly some of the features of interest in connection with the last Egg-Laying Test, stating that a new standard of scoring was initiated at the commencement of that test. Only those eggs which weighed two ounces or over were counted for scoring purposes, and this standard applied throughout the whole period of the test. There was an item in the printed report on this subject, and he thought there was much to commend the new method in addition to its simplicity and convenience.

As regards mortality, the figure for the test was 11.9 per cent., which was a shade higher than the corresponding figure for the previous test. Whilst it was always regrettable to find even a small increase in mortality, it was satisfying that the rate generally among the pens in the test was at least as good as that of the previous year, and that the small increase referred to was entirely due to a disproportionately high death rate in a very small number of the pens.

The test under review was the first to have a separate section for entries from Poultry Clubs and Young Farmers' Clubs, and the entrants in this section should be encouraged by the fact that one of the pens had an egg-production record not far short of that of the pen which won the premier award. He hoped that the smaller poultry breeders for whom this section was intended would support it enthusiastically, and use it as a means of improving the standard of their stock.

Alluding to the importance of good breeding stock, and what could be done by selective breeding, Dr. Robertson drew attention to the record, as revealed in the printed report, of those birds in the test which had been bred at the official Breeding Station at Hillsborough. Their egg production was higher than that of the other birds, and their mortality rate much lower. He urged that the question of good breeding methods was of fundamental importance, being at the very foundation of a progressive poultry industry, and that it

was only by selective breeding that poultry breeders could hope to attain the fullest measure of success. In view of the importance of this question, Dr. Robertson said he was sure that the meeting would have noted with deep satisfaction, that Miss Kidd, an eminent authority on poultry problems, had come over from England to address them on "The Breeding and Management of Poultry for Stamina."

Miss Kidd, in her address, said that mortality was no doubt the most serious problem facing the poultry industry to-day. The average rate of mortality in the Egg Laying Trials this year was 17.27 per cent., so that the rate of 11.9 per cent. for the Stormont Test was very favourable in comparison. Despite the grim mortality figures, however, there were many farms where the death rate might be called normal, but these farms were invariably owned or managed by people who might be described as possessing real "stock sense" and who worked with nature and not against it. She deprecated the practice of rearing birds constantly on the same piece of ground, stating that this was really a violation of the natural law of give and take, and could lead only to a high mortality rate.

Proceeding, Miss Kidd advised breeders to select for hatching only those eggs which were produced by mature birds, and which could otherwise be described as perfect. The chick flocks should be submitted to rigorous culling, and birds likely to be used for breeding should always be treated well when young, especially in a hygienic sense. Later on, when finally selecting birds for the breeding pen she would highly recommend breeders, first of all, to mark, while in the run, those birds whose carriage, eye colour and general habits, bespoke virility and stamina. She would afterwards submit the birds thus selected to a handling test, rejecting any which had bone deformities or other defects. Lastly, she would be guided by the trap-nesting records of the birds which satisfied the two foregoing standards, and make her final selection for the breeding pen accordingly.

Miss Kidd felt certain that those who worked on this plan would be breeding from the best type of bird. In addition it was, of course, necessary that the well-known laws relating to mating should be observed, which meant the avoidance of such practices as in-breeding, pullet-breeding, and breeding from immature cockerels.

She had noted that in Northern Ireland copper rings were awarded only to those birds which were of good type and had good handling points, in addition to having the necessary egg record, and she suggested that it would be for the well-being of the industry if a similar condition applied in all tests.

After Miss Kidd's address the Cups and Medals won at the last test were presented to the winners by Mrs. Mulholland, who was enthusiastically received by the audience.

FIFTEENTH EGG-LAYING TEST AT STORMONT.

The second four-weekly period ended on the 26th November. Both egg production and the size of egg increased during the period. The number of eggs laid during the four weeks was 11,884, of which 9,082 or 76.4 per cent. were scoring eggs, i.e., super grade and first grade. The average production on the basis of the 864 birds originally penned was 13.7 eggs per bird. The White Wyandottes had again the best average production, those in Section 5 (a) (Station-holders) leading the different sections with 17.3 eggs per bird, and those in Section 1 being next with an average of 15.9 eggs per bird.

The pen of White Wyandottes entered by Mrs. Rodgers, Ballyginney, Dundrum, in Section 5 (a) is leading in the entire test with a score of 217 eggs, of which 131 are of super grade, while the pen of Rhode Island Reds entered by Mrs. R. J. Dunn, Ballyskeagh, Artigarvan, in Section 5 (c) is second with a score of 210 eggs.

Three birds died during the period, which brings the mortality rate for the eight weeks the test has been in progress to 1.1 per cent.

The following are particulars of the leading pens in the various sections as at the end of the period under review:—

SECTION 1. WHITE WYANDOTTES (OPEN).

Position.	No. of pen.	Name and Address of Owner.	No. of eggs laid during 8 weeks.				Score Value
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	13	Mrs. J. R. Jackson, Fort View, Coleraine, Co. Londonderry.	89	116	58	1	205
2	3	Mrs. J. M. Brodgen, Fernshaw, Dungannon, Co. Tyrone.	34	141	92	3	175
3	22	Mr. J. C. Stewart, Balloo, Killinchy, Co. Down.	96	64	31	4	160
4	24	Mr. R. Tolerton, Holborn Hall, Plantation, Lisburn, Co. Down.	76	79	14	—	155

SECTION 2. WHITE LEGHORNS (OPEN).

1	32	Mr. D. Freeland, Craigavad, Co. Down.	34	101	56	1	135
2	39	Mr. J. Waugh, Ballyrickard, Kilwaughter, Larne, Co. Antrim.	32	100	17	3	132
3	33	Mrs. E. Johnston, Craigboy, Donaghadee, Co. Down.	77	49	17		126

SECTION 3. RHODE ISLAND REDS (OPEN)

Position.	No. of pen.	Name and Address of Owner.	No. of eggs laid during 8 weeks. Super Grade	1st Grade	2nd Grade	Below 2nd Grade	Score Value
1	53	Miss J. A. Irwin, Mount Irwin, Tynan, Co. Armagh.	62	130	13	—	192
2	60	Mr. R. J. O'Hanlon, Violet Cottage, Unshinagh, Portadown, Co. Armagh.	90	92	9	—	182
3	62	Mrs. D. Patterson, Ballycastle Road, Coleraine, Co. Derry.	49	117	87	6	166
4	59	Mrs. J. M'Neill, Drain's Bay, Larne, Co. Antrim.	154	11	1	—	165

SECTION 4. ANY OTHER PURE BREED (OPEN).

1	75	Mrs. M. Finlay, Langfield, Armoy, Co. Antrim. (Light Sussex.)	63	124	53	—	187
2	86	Mr. R. Holmes, Moneycarrie, Killykergan, Coleraine, Co. Derry. (Buff Rocks)	72	98	63	6	176
3	74	Miss M. Crowe, Knappagh, Killylea, Co. Armagh. (Light Sussex)	68	78	46	1	146

SECTION 5(*a*). WHITE WYANDOTTES (STATION HOLDERS).

1	99	Mrs. M. Rodgers, Ballyginney, Dundrum, Co. Down.	131	86	48	2	217
2	93	Mr. C. E. Crooke, The Rocks, Blaney, Enniskillen, Co. Fermanagh.	40	143	80	4	183
3	91	Mr. W. A. Bell, Donaghanie, Beragh, Co. Tyrone.	67	113	75	3	180
4	101	Mrs. M. J. Veitch, Knockninny, Thompson's Bridge, Co. Fermanagh.	85	90	9	—	175

SECTION 5(*b*). WHITE LEGHORNS (STATION HOLDERS).

1	112	Mrs. M. Noble, Roundpark House, Killycramph, Lisnaskea, Co. Fermanagh.	32	118	40	2	150
2	111	Mrs. J. Knox, Shanmullagh, Ederney, Co. Fermanagh.	55	67	7	1	122
3	105	Mrs. J. Brown, Gorsebank, Culcrum, Co. Antrim.	42	72	43	3	114

SECTION 5(*c*). RHODE ISLAND REDS (STATION HOLDERS).

Position	No. of Pen.	Nrme and Address of Owner.	No. of eggs laid during 8 weeks.				Score value.
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	117	Mrs. R. J. Dunn, Ballyskeagh, Artigarvan, Co. Tyrone.	72	138	15	—	210
2	115	Mrs. H. H. Dickson, Lower Coagh, Coagh, Co. Tyrone.	78	82	26	—	160
3	122	Mrs. W. McCallum, Aldohil House, Newtownstewart, Co. Tyrone.	46	113	47	2	159
4	127	Mrs. H. McMaster, Little Ballymena Broughshane, Co. Antrim.	76	82	11	2	158

SECTION 6. POULTRY CLUBS AND YOUNG FARMERS' CLUBS.

Position.	No. of pen.	Club and Breed.	No. of eggs laid during 8 weeks.				Score Value
			Super Grade	1st Grade	2nd Grade	Below 2nd Grade	
1	145	Saintfield Young Farmers' Club. Co. Down. (Rhode Island Red)	57	114	36	1	171
2	135	Aghadowey Poultry Club. Co. Londonderry. (Rhode Island Red)	44	111	38	9	155
3	137	Ballywalter Young Farmers' Club. Co. Down. (White Wyandotte)	57	95	33	4	152

TRAINING OF GIRLS IN POULTRY-KEEPING, DAIRYING, ETC.

The next session at the North West School, Strabane, and the Ulster Dairy School, Cookstown, will open on the 5th January, 1937. Early application for admission to either school is essential.

Admission to the North West School, at which there is accommodation for 24 pupils, is by scholarships given by the County Committees of Agriculture. A sound practical training in modern economical methods of dairying, poultry-keeping and rural housewifery, is provided at the School, and the scholarships include free tuition, board and residence. Application for these scholarships should be made to the Secretary or Agricultural Organiser of the Committee of Agriculture for the county in which the applicant resides.

The Ulster Dairy School, which is situated at Loughry, Cookstown, County Tyrone, has accommodation for 50 pupils, and provides the most up-to-date training in all matters connected with woman's activities in farm life. Fees for the ordinary school course of three terms are £3 3s. 0d. per term. Application for admission to the Ulster Dairy School should be made to the Secretary, Ministry of Agriculture, Stormont.

Prospectuses of both schools, containing application forms, may be obtained from the Ministry free on request.

PRICES OF FEEDING STUFFS.

The following table shows the average retail prices per cwt. of Feeding Stuffs at 1st December, 1936, with comparative figures for the corresponding date in 1935.

	1936.					1935.				
	Price per cwt.	Protein equivalent	Price per unit of protein equivalent	Starch equivalent	Price per unit of starch equivalent	Price per cwt.	Protein equivalent	Price per unit of protein equivalent	Starch equivalent	Price per unit of starch equivalent
STARCHY FOODS:	s. d.		s. d.		s. d.	s. d.		s. d.		s. d.
Maize (whole)	6 4	6.8	18 7½	81.5	1 7	4 10	6.8	14 2	81.5	1 2
Maize Meal	6 9	6.8	19 10	81.5	1 8	5 1	6.8	14 11	81.5	1 3
Bran, Red	7 11	10 0	15 10	45.3	3 6	7 1	10.0	14 2	45.3	3 2
Bran, White	8 11	10.0	17 10	45.3	3 11	8 4	10.0	16 8	45.3	3 8
Pollard, Brown	7 11½	11.0	14 5½	71.2	2 3	7 3	11.0	13 2	71.2	2 0
Pollard, White	8 10½	11.0	16 2	71.2	2 6	8 4	11.0	15 2	71.2	2 4
Barley Meal	8 8	6.2	27 11½	69.7	2 6	6 8	6.2	21 6	69.7	1 11
Oats	5 7½	7.6	14 10	60.0	1 11	5 1	7.6	13 5	60.0	1 8
Wheat (Whole)	8 10½	9.6	18 6	72.0	2 6	7 0	9.6	14 7	72.0	1 11
PROTEIN FOODS:										
Linseed Cake, home-made ..	11 3	25 0	9 0	71.8	3 2	10 5	25.0	8 4	71.8	2 11
Linseed Cake, foreign	10 3½	25.0	8 3	71.8	2 10½	9 2	25.0	7 4	71.8	2 7
Linseed Cake Meal	10 10½	25.0	8 8½	72.8	3 0	9 7	25.0	7 8	72.8	2 8
Cotton Cake, decorticated ..	9 5½	35.0	5 5	71.2	2 8	9 1	35.0	5 2	71.2	2 7
Cotton Cake, undecorticated ...	7 3	17.0	8 6	39.2	3 8½	6 5	17.0	7 7	39.2	3 3
Earth Nut Cake decorticated ..	9 4½	41.0	4 7	73.0	2 7	8 7	41.0	4 2	73.0	2 4
Soya Bean Meal (extracted) ..	10 7	38.0	5 7	64.0	3 4	8 9	38.0	4 7	64.0	2 9
Fish Meal (60% protein) ..	16 3	53.0	6 2	58.9	5 6	15 3	53.0	5 9	58.9	5 2
Meat and Bone Meal (40% protein)	10 3½	36.2	5 8	44.0	4 8	9 7	36.2	5 3	44.0	4 4
Meat and Bone Meal (60%protein)	14 7	54.9	5 4	61.3	4 9	14 8	54.9	5 4	61.3	4 9
OTHER FEEDING STUFFS:										
Linseed, whole	16 7½	19.0	17 6	119.2	2 9	15 5	19.0	16 3	119.2	2 7
Palm Nut Cake	8 1½	17.0	9 7	70.2	2 4	8 1	17.0	9 6	70.2	2 4
Palm Nut Meal	8 0	17.0	9 5	78.0	2 1	8 2	17.0	9 7	78.0	2 1
Potatoes	3 10	0.6	127 9	18.0	4 3	2 6	0.6	83 4	18.0	2 9
Oat Straw	2 2	0.9	48 2	20.0	2 2	1 10	0.9	40 9	20.0	1 10
Meadow Hay	2 5	4.6	10 6	37.0	1 4	2 1	4.6	9 1	37.0	1 2
Turnips	0 10½	0.7	25 0	7.0	2 6	—	0.7	—	7.0	—

PRICES OF FEEDING STUFFS.

One of the objects of the foregoing table is to guide farmers in the economic purchase of feeding stuffs.

Ignoring their mineral content, the valuable constituents of any feeding stuff, whether home-grown or purchased, consist of:—

(1) Carbohydrates—a group of substances which include materials such as starch, sugar, etc. They supply heat or energy to the animal, and the surplus is stored by the animal as fat.

(2) Oil—which also provides heat or energy, the surplus being stored as fat. For this purpose oil is approximately 2½ times as valuable as the carbohydrates, but its presence in the ration in excessive quantities may lower the digestibility of the ration and cause digestive troubles.

(3) Protein—The group of bodies termed protein or albuminoids contain nitrogen. Protein is the only ingredient of a feeding stuff which can produce flesh or muscle, and hence its special importance.

All animals require a certain amount of each of the above constituents, but the relative amounts depend upon the class of stock. Thus, for example, a two-year-old fattening bullock requires a relatively small amount of protein (flesh forming material). Its ration should consist mainly of foods rich in carbohydrates, i.e., fat producing substances. On the other hand, a dairy cow is producing milk, which is a substance rich in protein, and as the protein, that is flesh forming material in milk, can only be derived from the protein in the food, the ration for the dairy cow must contain considerably more protein than that for the fattening bullock.

There are very wide differences in the composition of feeding stuffs, both home grown and purchased. Some, such as oats and maize, are rich in carbohydrates, and, therefore, particularly valuable for fattening purposes, whilst others, such as decorticated cotton cake, earthnut cake and linseed cake, are rich in protein, and are chiefly valuable for their flesh and milk-producing properties.

In the following table the composition of some of the more commonly used feeding stuffs is shown:—

PERCENTAGE COMPOSITION.

	Water.	Protein.	Oil	Carbohydrates.
Turnips (Swedes)	88	1	0.2	9
Potatoes	75	2	0.1	21
Oat Straw	14	4	2	37
Meadow Hay	10	10	3	45
Pasture Grass	80	3.5	0.8	10
Cabbage	89	1.5	0.5	8
Fattening Foods:				
Oats	13	9	6	60
Maize Meal	12	10	4	70
Barley Meal	13	12	2	66
Flesh Forming Foods:				
Linseed Cake	11	30	10	35
Decorticated Cotton Cake	9	40	9	26

The farmer frequently asks what is the cheapest feeding stuff to buy. It is, however, often very difficult to give a direct answer. Much depends upon what the feeding stuff is required for, whether for fattening or milk production. Again, maize and oats are essentially fattening foods, whilst decorticated cotton cake is a flesh-forming food, and it would be just as futile to use the cost per ton to compare their values as it would be to use the cost per ton to compare the values of, say, sulphate of ammonia and superphosphate.

Foods of similar composition can, however, be compared, and it is possible for the enterprising farmer to effect considerable economies, not only in the use of home-grown feeding stuffs, but particularly in the purchase of concentrated feeding stuffs, by studying the market prices.

The starch equivalent figure is a measure of the energy, heat or fat producing value of the feeding stuff, and shows the number of pounds of starch which would be required to give the same heat or energy as 100 lb. of the feeding stuff. For example, the table on page 50 states that the starch equivalent of maize meal is 81½, or, in other words, 100 lb. of maize meal will provide as much heat or energy as 81½ lb. of pure starch.

The protein equivalent figure shows the number of pounds of digestible flesh or muscle producing material in 100 lb. of each of the feeding stuffs listed.

PRICES OF FERTILISERS.

The following table shows the ranges of retail cash prices of fertilisers per ton at 1st December, 1936.

	£ s. d.		£ s. d.	Cost of unit of fertilising ingredient at average of range of prices shown.		
Nitrogenous Manures				Nitrogen.	Phos. Acid	Potash
Nitrate of Soda (15%N.)	7 10 0	to	8 10 0	10/8		
Sulphate of Ammonia (20.6%N.)	7 5 0	,,	7 10 0	7/2		
Nitro Chalk (15.5%N.)	7 5 0	,,	8 0 0	9/10		
Sulphate Manures						
Superphosphate (16% S.P.A.)	3 10 0	,,	3 17 6		4/7½	
Semsol (5% S.P.A. 15½% P.A.)	3 5 0	,,	3 10 0		4/4½	
Basic Slag (18% P.A.)	3 15 0	,,	4 15 0		4/8¾	
Gafsa Mineral Phosphate (26% P.A.)	2 17 6	,,	3 5 0		2/4¼	
Potash Manures						
Kainit (14% P.)	3 5 0	,,	4 5 0			3/4½
Potash Salts (20% P.)	4 0 0	,,	4 15 0			4/4½
Potash Salts (30% P.)	5 0 0	,,	5 15 0			3/7
Muriate of Potash (50% P.)	8 0 0	,,	10 0 0			3/7¼
Agricultural Salt	1 0 0	,,	2 10 0			

Abbreviations:- N.=Nitrogen. S.P.A.=Soluble Phosphoric Acid. P.A.=Phosphoric Acid. P.=Potash.

The cost of the unit of fertilising ingredient is determined by dividing the price per ton by the percentage of the ingredient contained in the manure, and this method of determining values is the only sound basis on which two grades of a manure which supplies the same fertilising ingredient can be compared. The price per ton is not a reliable guide as to which is the better value for money. For example, in the table of prices it is seen that the average of the range of prices for 14% Kainit is £3 15s. 0d. per ton, and for 30% Potash Salts £5 7s. 6d. per ton, and it might be concluded that the Kainit was the better value for money. This is not so. The 30% Potash Salts contains more than twice as much Potash as the Kainit, and is therefore a cheaper source of potash when the price is even double that at which the Kainit is offered. The cost of a unit of potash in the 30% Potash Salts is seen to be only 3/7, whereas the cost of a unit of potash in Kainit is 5/4¼. At the prices ruling for these manures, 30% Potash Salts is, therefore, better value for money than Kainit. Similarly, it is seen that at the prices prevailing Gafsa Mineral Phosphate is a cheaper source of Phosphoric Acid than Basic Slag, and that Sulphate of Ammonia is the cheapest source of Nitrogen.

In connection with the costs of the units of Phosphoric Acid, as shown in the table on page 52, it should be noted that in the case of Superphosphate, the cost is that of a unit of Soluble Phosphoric Acid; whereas in the cases of Basic Slag, Semsol and Gafsa Mineral Phosphate, the figures represent the cost of a unit of insoluble Phosphoric Acid. It would not, therefore, be correct to compare the unit price of the phosphoric acid in Superphosphate with those of the phosphoric acid in the other three.

PRICES OF FAT STOCK.

The following were the average prices per live cwt. of bullocks and heifers, sold at Belfast Auction Marts during each of the four weeks ended 24th November, 1936:—

Week ended.	Bullocks.		Heifers.	
	s.	d.	s.	d.
3rd November ...	30	9	30	3
10th November ...	30	9	30	3
17th November ...	31	0	30	6
24th November ...	31	9	31	3

PRICES OF LIVE STOCK.

Average Prices of Live Stock at Fairs during the month of November, 1936.

Date	Fair	Calves (under 9 months)	Store Cattle	Fat Cattle (18 months and over)	Springers		Milch Cows	Store Sheep		Fat Lambs (under 12 months old)	Young Pigs
					Cows	Heifers		Feeding Lambs (under 12 months old)	Breeding Ewes		
		Per head £ s.	Per cwt. Live weight.	Per cwt. Live wgt.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.	Per head £ s.
3	Omagh ..	5 3/3	31/– to 32/6	29/–	16 10	15 10	15 10	—	*1 15	*1 10	—
4	Londonderry	—	26/6 to 32/6	29/–	15 15	14 0	—	—	—	—	1 7
4	Rathfriland ..	4 10	31/6 to 37/6	28/6	17 0	15 15	16 10	†0 13	†1 13/6	*1 6	1 6
5	Ballymoney ..	5 6/6	27/9 to 33/6	28/–	14 5	13 0	12 17/6	—	‡1 15	‡1 13	1 8
6	Moy ..	—	27/– to 33/–	29/–	16 7/6	13 5	16 0	—	*1 13/9	*1 12/6	—
9	Irvinestown	5 10/9	28/– to 33/–	29/–	15 10	13 10	15 10	—	—	‡1 10	1 10
10	Dungiven ..	—	27/– to 31/6	28/6	—	18 0	—	†0 11	—	—	1 6
10	Enniskillen	3 15	22/– to 26/–	28/–	18 0	14 0	15 10	—	—	—	1 5
11	Crossgar ..	—	30/– to 32/–	—	17 10	15 10	16 5	—	—	—	1 15
12	Strabane ..	3 17/6	30/– to 32/6	28/–	15 15	—	13 10	—	—	—	—
13	Ballygawley	—	28/– to 35/6	27/6	16 0	—	14 10	*1 10	*1 15	—	1 7/6
16	Camlough ..	4 5	22/– to 28/6	28/6	15 10	14 10	13 0	†0 12	—	*1 8	—
18	Lisnaskea ..	4 13/3	26/– to 31/–	30/–	16 0	15 10	15 0	—	—	—	1 9
19	Ballynahinch	—	28/– to 31/–	—	18 10	15 5	16 10	—	—	*1 10	1 15
21	Moneymore	4 2/9	31/6 to 34/6	28/–	16 5	14 10	16 0	*1 6/3	—	—	1 10
21	Portadown ..	4 0/3	29/– to 33/–	29/6	17 0	15 0	17 0	—	—	—	1 12/6
23	Fintona ..	5 2	32/– to 33/–	29/–	17 0	13 10	15 10	—	*1 15	—	1 8/6
26	Antrim ..	5 3/6	26/6 to 31/–	30/–	19 10	16 7/6	—	—	—	—	1 12/6
27	Castlederg ..	3 10	32/– to 32/6	29/–	16 10	—	—	†0 11	*1 14	—	1 6
27	Killylea ..	—	27/– to 35/–	30/–	16 0	—	15 0	—	—	—	—
28	Ballymena ..	6 8/9	23/6 to 35/6	—	21 0	21 0	20 0	—	—	—	1 10

* Downs and Cross. ‡ Long Wools. † Mountain.

IMPORTS AND EXPORTS.

Table showing the Imports and Exports through Northern Ireland ports of certain Agricultural Products during the month ended 31st October, 1936, and the ten months ended 31st October, 1936, with comparative figures for the corresponding periods in 1935.

(These figures are supplied through the courtesy of the Ministry of Commerce and are subject to revision).

COMMODITY	IMPORTS.				EXPORTS.			
	Month ended 31st October		Ten months ended 31st October		Month ended 31st October		Ten months ended 31st October	
	1936	1935	1936	1935	1936	1935	1936	1935
Bacon .. .. cwt.	†1,310	2,597	†15,480	26,742	†38,501	24,792	†329,643	188,617
Hams .. .. cwt.	766	590	8,336	7,976	14,030	14,905	119,133	105,615
Pork .. .. cwt.	20	—	69	8	2,963	2,314	31,996	32,095
Butter .. .. cwt.	9,485	5,127	112,670	110,313	772	741	6,194	5,511
Eggs .. .. gt. hds.	6,458	9,899	63,969	63,220	216,016	235,091	3,205,431	3,010,038
Oat Products (inc. Oatmeal) cwt.	1,688	2,146	24,420	17,615	6,602	8,863	61,242	70,274
Potatoes .. .. tons	—	7	279	135	*15,055	*14,886	*184,453	*118,979
Poultry .. .. cwt.	2	—	135	161	12,700	9,496	140,946	124,176
Grass Seeds .. cwt.	494	3,023	9,631	38,137	5,357	3,757	287,271	230,008

* These figures represent the quantities of potatoes inspected for shipment by the Ministry.

† These figures do not include direct trade with places abroad.

There were no imports of oats direct from abroad through Northern Ireland ports either in October, 1936, or in the corresponding month of last year.

SHIPMENTS OF LIVE STOCK.

Statement showing the Shipments of Live Stock from Northern Ireland ports during the following periods:—
Months of Nov., 1936, October, 1936, Nov., 1935; Eleven Months ended 30th Nov., 1936, and 30th Nov., 1935.

PORTS OF :—	CATTLE.						SHEEP.				PIGS.			Horses
	Fats.	Stores.	Milch Cows.	Springers.	Calves.	Total.	Fats.	Stores.	Lambs.	Total.	Fats.	Stores.	Total.	
Belfast	4,714	4,631	1,355	81	—	10,781	4,788	—	—	4,788	3,288	50	3,338	172
Larne	—	1,017	—	—	10	1,027	—	—	—	—	1,049	181	1,230	31
Londonderry ..	94	6,026	73	53	136	6,382	1,685	—	—	1,685	372	—	372	7
Newry	48	211	—	—	—	259	190	—	—	190	—	—	—	—
Total, November, 1936	4,856	11,885	1,428	134	146	18,449	6,663	—	—	6,663	4,709	231	4,940	210
Total, October, 1936 ..	5,305	16,876	1,698	182	158	24,219	9,761	100	—	9,861	3,501	136	3,637	206
Total, November, 1935	8,068	19,147	1,461	88	1,131	29,895	13,435	—	—	13,435	5,434	58	5,492	291
Total, Eleven Months ended 30th Nov., 1936	68,439	158,991	15,652	2,135	12,839	258,056	45,489	535	109,587	155,611	42,419	1,051	43,470	4,656
Total, Eleven Months ended 30th Nov., 1935	71,772	194,862	17,027	3,011	17,260	303,932	64,886	6	92,259	157,151	75,397	2,509	77,906	4,959

Table showing the numbers of Live Stock (1) exposed for sale, and (2) sold at 18 fairs in Northern Ireland during the months of November, 1935, and October and November, 1936.

Description of Live Stock.	November, 1935.		October, 1936.		November, 1936.	
	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.	Number exposed for sale.	Number sold.
Store Cattle ...	8,998	6,262	7,776	5,091	7,883	5,392
Fat Cattle ...	1,232	1,093	1,554	1,226	1,299	1,165
Dairy Cattle ...	1,550	1,237	1,540	1,153	1,411	1,134
Sheep ...	158	89	1,029	783	209	169
Lambs ...	207	186	772	651	240	157
Young Pigs ...	2,231	1,656	2,912	2,335	3,127	2,220

Store cattle were slightly increased in supply at fairs last month, and with trade showing a distinct improvement, larger numbers were sold. Large stores in forward condition for fattening were again in strong demand, as also were heifers suitable for breeding; whilst small stores were eagerly sought after by local graziers. The prices for stores generally tended firmer. Trade in fat cattle was unchanged at the beginning of the month, but improved during the last two weeks, when higher prices were paid. Dairy stock remained a very good trade, and previous high prices have been well maintained, and, in some cases, exceeded for choice animals. Supplies of sheep and lambs were again much smaller. Trade remained on the quiet side, but good class breeding ewes were in request, and stores for feeding were a fair trade. Anything showing finish met a good local enquiry.

Young pigs were in good supply, and little change in business was evident. Price fluctuations were slight, and the average price for the month was much the same as for October. The quality of the brood sows that were offered at fairs last month showed no improvement, and trade remained dull at low levels, except in the case of some animals showing quality which were readily sold at satisfactory prices.

This report will be sent free monthly as issued on application being made to the Secretary, Ministry of Agriculture, Stormont, Belfast.

11th December, 1936.

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List of Leaflets and other Publications.

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No. 1. Flax Seed, 1936.
" 2. Improvement of Farm Poultry.
" 3. Feeding for Egg Production.
" 4. Marketing of Eggs.
" 5. The Dishorning of Calves.
" 6. The Packing of Apples in Standard Boxes
" 7. Potato Trials
" 8. Seed Testing for Farmers.
" 9. The Renovation of Orchards.
" 10. Fruit Tree Pests—Capsid Bugs.
" 11. Fruit Tree Pests—Aphides and Apple Sucker.
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" 21. The Uses and Advantages of Portable Poultry Houses.
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" 23. The Handling and Care of Wool.
" 24. Fluke in Sheep.
" 25. The Rearing and Management of Young Horses.
" 26. Ordnance Survey Maps for Farmers.
" 27. How to Keep Eggs Clean
" 28. The Construction of a Laying House for Poultry.
" 29. The Selection and Breeding of Laying Hens.
" 31. Coccidiosis in Poultry.
" 32. Roup of Poultry (Fowl Pox).
" 33. Spraying Calendar for Apple Orchards.
" 34. The Pruning of Apple Trees.
" 35 The Fattening of Pigs.
" 36. Advantages of Milk Recording.
" 37. The Raising and Fattening of Turkeys.
" 38. The Destruction of Charlock.
" 39. The Production of Clean Milk.
" 40. The Laying Down and Management of Temporary Pastures.
" 41. Blackleg, Blackquarter or Quarterill.
" 42. The Purchase of Balanced Rations for Dairy Cows.
" 43. Tuberculosis in Poultry.
No. 44. Results of Crop Experiments, 1935.
" 45. The Breeding and Rearing of Pigs.
" 46. Hints for Winter Egg Production.
" 47. The Care and Management of Sheep.
" 49. American Gooseberry Mildew.
" 50. Potato Blight.
" 51. Butter-making on the Farm.
" 52. Gapes in Chickens.
" 54. The Breeding and Rearing of Calves.
" 55. Destruction of Ragwort or Benweed.
" 56. Identification of Egg Supplies.
" 57. How to have Eggs of First Quality.
" 58. How the Fertilisers and Feeding Stuffs Act benefits the Farmer.
" 59. Bacillary White Diarrhoea (Pullorum Disease).
" 60. Advantages of Winter Agricultural Classes.
" 61. The Care and Management of Breeding Bulls.
" 62. The Production of Timber on the Farm.
" 63. Sheep—Castration, Docking, Foot-Rot and Care of Feet.
" 64 The Destruction of Warble Fly Maggots in Cattle.
" 65. The Packing of Apples in Barrels.
" 66. Seed Testing Facilities for Traders.
" 67. The Cultivation of Vegetables.
" 68. The Cultivation of Strawberries.
" 69. The Construction of Piggeries.
" 70. Ringworm.
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" 72. Tree Planting for Shelter and Ornament.
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" 75. Pig Production and the Pigs Marketing Scheme.
" 76. Acarine (Isle of Wight) Disease of Bees.
" 77. Licensing of Milk Producers and Distributors.
" 78. Graded Milk.
" 79. The Picking and Storing of Apples.
" 80. Hoose or Husk in Farm Stock.
" 81. The Construction of Cow Houses.
" 82 White Scour in Calves.
" 83. The Care, Management and Feeding of the Poultry Breeding Stock.

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CIRCULARS.

No. 1. Phosphatic Fertilisers.
" 5. Why Pay a Tax on the Horns of Cattle ?
" 8. Basic Slag.
" 9. Smut in Oats.
" 10. Purchase of Fertilisers and Feeding Stuffs.
" 11. Fertilisers and Feeding Stuffs Act—General Summary.
" 12. The Treatment of Liver Fluke.
" 13. The ox-Warble Fly.
" 306. Fertilisers and Feeding Stuffs Act, 1926—Revision of Regulations.

MISCELLANEOUS PUBLICATIONS.

Store Cattle.
Reports on Egg-Laying Tests.
Crop Insurance.
List of Growers of Certified Crops of Immune Varieties of Potatoes.
List of Growers of Certified Crops of Non-Immune Varieties of Potatoes.
The Ministry's Monthly Report.
Register of Premium Stallions.
Guide to the Live Stock Breeding Act (Northern Ireland), 1922.
Guide to the Marketing of Fruit Act (Northern Ireland), 1932.

Any of the above publications may be obtained free of charge and post free on application to the Secretary, Ministry of Agriculture, Stormont, Belfast.

The following publications can be obtained from His Majesty's Stationery Office, 80 Chichester Street, Belfast, at the prices stated :—

(1) The Annual Report of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
(2) Annual Report upon the Agricultural Statistics of Northern Ireland. Price 2/- net.
(3) The Journal of the Ministry of Agriculture for Northern Ireland. Price 2/6 net.
(4) The Agricultural Output of Northern Ireland, 1925. Price 2/6 net.